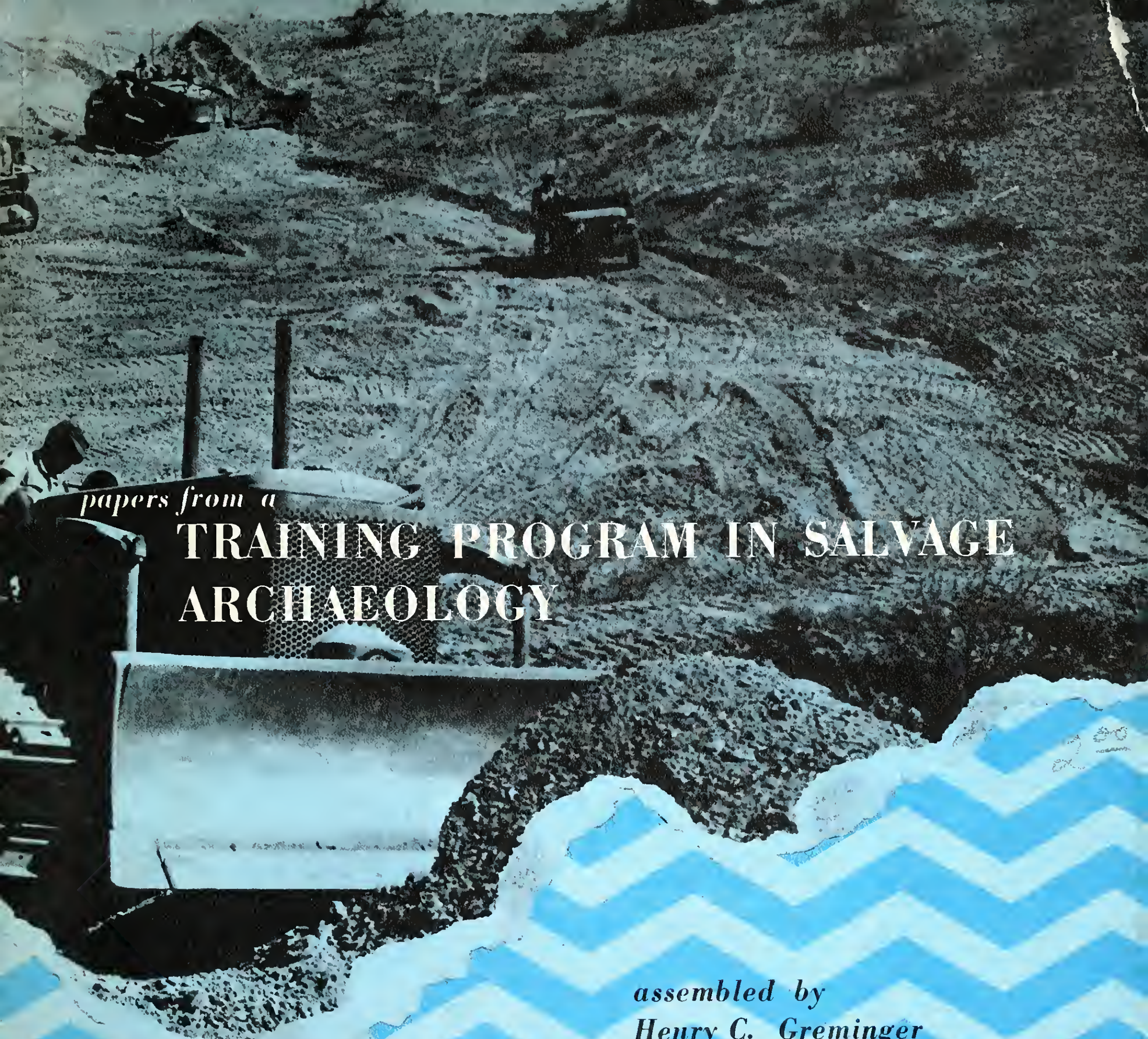

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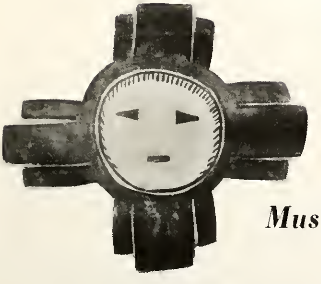

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Edited by
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Curator of Salvage Archaeology

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FOREWORD

The papers in this volume describe the results of an experimental project conducted during the summer of 1960 as a training exercise for a group of advanced students interested in the special problems and techniques of salvage archaeology. The project was carried out with the assistance of a grant from the National Science Foundation, and sponsored by the Museum of New Mexico and the Fort Burgwin Research Center.

There were three phases to the project: first, a series of lectures and seminars on salvage archaeology; second, a three week field problem; and third, a three week laboratory interval for the analysis of materials and preparation of reports on the excavations. These reports comprise the present volume.

Each of the six students selected to participate in the project had previous field training, mostly as assistant foreman on at least one project. This was experience outside the Southwest, however, and usually unrelated to salvage situations.

Seminars and lectures, most of which were held at the Fort Burgwin Research Center, were presented by representatives from industry and government. Included were such topics as: the interpretation of engineering designs, the legal background for salvage archaeology, co-ordination of salvage and construction activities, archaeologist-contractor relations, contract procedures, and a review of basic surveying, photographic and recording techniques. This last group of topics was included to promote a minimum standard for recording excavations, and also to acquaint the students with standard procedures of the Museum of New Mexico.

Following the week at Fort Burgwin, the students moved to the Museum of New Mexico Navajo Project Field Camp at Allison, Colorado. This camp serves as headquarters for salvage operation by the Museum in the area to be flooded by the Navajo Reservoir. There were additional seminars at the camp, and a brief visit to a highway construction project. Actual field work began with surveys of three simulated highway right-of-way alignments, prepared especially for the project by the New Mexico State Highway Department, Farmington Office. These right-of-ways were placed in an area to be inundated by the Navajo Reservoir, and were deliberately aligned to include a previously selected series of archaeological sites. These sites, soon to be destroyed by the Reservoir, were not regarded as critical to interpretation of the area's prehistory. Critical sites are being dug by the regular Navajo Project crews. The study sites were selected because it was thought they would shed additional light on one of the major developments in the area, the transition from Pueblo I.

For purposes of supervision the students were grouped in three two-man crews. Each crew was given maps of the simulated right-of-ways, started in the direction of the project, and told to make an archaeological survey of the area included in the hypothetical construction activities. To do this, the students not only had to read and understand engineering plans, but also interpret them correctly from coded reference stakes set out by the highway survey crews. When a site was found, the students had to prepare an estimate of the labor and equipment needed for adequate salvage. In making their estimates, they had to keep in mind that all salvage work had to be completed in three weeks. Because of a labor and equipment shortage there could be no more than six workmen per crew. The only available equipment was a dump truck and a tractor with back-hoe and front-end loader. This was a realistic salvage problem, paralleling situations frequently encountered on pipeline and highway salvage projects.

To complicate the problem further, the right-of-way intentionally included more sites than could reasonably be dug in the available time. This was done so the students would have to consider various aspects of the problem--access, condition, size, and the presence of similar sites in the area --in making their decision on which site or sites to excavate. As it turned out, the students' selections closely coincided with previous appraisals by the project supervisors. Realistically, the sites the students elected not to salvage will actually be destroyed by the Reservoir, without any record other than what was obtained from the surface survey.

After surveys were completed, the students requisitioned labor and equipment and, following procedures of an actual construction situation, work was begun immediately. Each crew was expected to proceed with its excavations as rapidly as the situation permitted, and to use power equipment whenever feasible. However, speed of the work was not to be so extreme as to cause significant loss in the information recovered. It was the purpose of the field instructors, Stewart Peckham, James V. Sciscenti, and myself, to see that there was proper balance between speed and precision. The instructors, however, were primarily observers and advisors. We avoided supervising the excavation crews; this was the students' responsibility.

At the conclusion of the field problem, the students returned to the Fort Burgwin Research Center to complete their analyses and prepare final descriptive reports on the excavations. In addition to the written text of the report, all illustrations, including maps, line drawings, and photographs were prepared at this time. The final reports were completed, in their approximate present form, at the end of three weeks. Mr. Greminger, a student on the project, undertook the task of assembling the papers for publication.

The short time allowed for report preparation was another deliberate effort to imitate actual situations found in salvage archaeology. All too frequently, salvage problems are almost continuous operations, lasting some time. If reports describing the results of such excavations are to be prepared at all, they must often be written during the brief periods separating field projects. As a result, these reports frequently lack penetrating, intensive analysis or discussions; but they do record data recovered from the excavations and should present, in a preliminary way, the major conclusions developed from this data. It is hoped that the present papers meet these minimum standards.

It is difficult to evaluate the effectiveness of this project as a training exercise. For most of the students, this was their first experience in full charge of a project; for all of them, it was their initial exposure to archaeology conducted under the pressures of salvage operations. Nevertheless, the students had had sufficient previous training to assume almost complete responsibility for their projects and made rapid adjustments to the salvage situation. As the students became more self-confident and familiar with the use of power equipment, the speed of work was greatly accelerated. This was illustrated dramatically by one crew; it took them two weeks to excavate their first pit house, but only three days to clear a second house about the same size as the first. There is no apparent difference between the data recovered from the two houses.

Through seminars, the students became familiar with problems of administration, management of salvage programs, and developed an appreciation for the attitude and problems of the construction people who work with archaeologists. It will be necessary to wait until some of the students become directly involved in salvage programs before we can evaluate the effectiveness of these aspects of the project. This background and training may enable them to devise more effective means of co-ordinating archaeological salvage projects with construction activities.

Fred Wendorf

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Our special thanks to the editors Dr. Alfred E. Dittert, Jr., Curator of Salvage Archaeology, and to Mr. Edwin Pigeon, Editor of Publications, Division of Anthropology, Museum of New Mexico. Manuscript and typewritten charts were done by Mrs. Terri Reznik. Mr. Richard Wormser gave freely of his time to offer editorial suggestions. Final editing and printing arrangements have been made by the Museum of New Mexico Publications Committee.

We are indebted to the National Science Foundation for the funds available for this program and to the Museum of New Mexico and the Fort Burgwin Research Center for providing the needed facilities.

Henry C. Greminger

AN INTRODUCTION TO THE SITE REPORTS

by HENRY C. GREMINGER

The sites considered in the following articles are located within the area to be inundated by the Navajo Reservoir on the San Juan River in northwestern New Mexico. Specifically, all three sites are situated on units of the Pleistocene (?) bench system that bounds the east side of the San Juan River, approximately 2.5 miles southwest of Rosa, New Mexico. Detailed descriptions of the Rosa Section have been set forth by Dittert, Hester, and Eddy (1961, 91-102). However, in order to provide a setting for the manifestations, a brief review of the cultural sequence in the Navajo Reservoir District is given.

If the sparse remains of Early Man are excluded, the cultural sequence in the Navajo Reservoir District begins with the Lithic Complex. This cultural period between 300 and 500 B.C. has cultural and temporal similarities to the San Jose Complex to the south. Separated by a 500 year hiatus in occupation, are Basket Maker II remains, termed the Los Pinos Phase (A.D. 1 to 400). Cultural remains of the Los Pinos Phase are most closely related to those found near Durango, Colorado. Another interval without occupants in the Navajo Reservoir District, ended with the appearance of Rosa Phase manifestations about A.D. 700. The Pueblo Period, A.D. 700 to 1050, represents a continuum of occupation, divided into three phases on the basis of distinctive culture changes. From early to late, the divisions are: Rosa Phase (A.D. 700 to 900), Piedra Phase (A.D. 850 to 950), and Arboles Phase (A.D. 950 to 1050). In terms of the Pecos classification, the Pueblo Period lasts from the end of Basket Maker III into Pueblo II.

People left the Navajo Reservoir District again at the end of the Arboles Phase, and it remained without definable occupants until the middle of the 1500's. Small groups of Navajos began to filter into the District at that time. The first period of Navajo occupation, the Dinetah Phase (A.D. 1550 ? to 1698), is characterized by a scarcity of those items which would have indicated Pueblo contacts. During the succeeding Gobernador Phase (A.D. 1698 to 1775), Refugee Pueblos were established immediately south of the Navajo Reservoir District; the Navajo sites exhibit many characteristics of Pueblo origin. It appears that the Navajo left the district by A.D. 1775.

The final occupation is termed the Lucero Phase. About A.D. 1870, Spanish-Americans from the Chama Valley began to take up homesteads along the San Juan River, upstream from Blanco, New Mexico, where they practiced farming and herding on a subsistence economy level. Construction of the Navajo Dam has brought this phase to an end.

Sites LA 4242, LA 4245, and LA 4247 are manifestations of the Pueblo Period. Collectively, the sites span the period from the end of the Rosa Phase into the Piedra Phase. Selection of examples illustrating the transition between the two phases was purposeful. At the time of the training program, a large Piedra Phase village nearby (LA 4195) was being excavated by Navajo Project crews. Although there are examples of Rosa Phase architecture at the village, many of the features had been destroyed by rebuilding. Consequently, the study of remains representative of the period immediately preceding the main Piedra Phase occupation at LA 4195 is considered a valuable adjunct to the interpretation of the latter site.

In terms of the local historiography, sites LA 4242, LA 4245, and LA 4247 had been occupied only briefly because of outside influences and environmental factors. The beginnings of trade with districts to the west and northwest are apparent in design. Style changes are evident in architecture and other artifacts. After the period of these sites, the changes become more obvious.

Events resulting from environmental

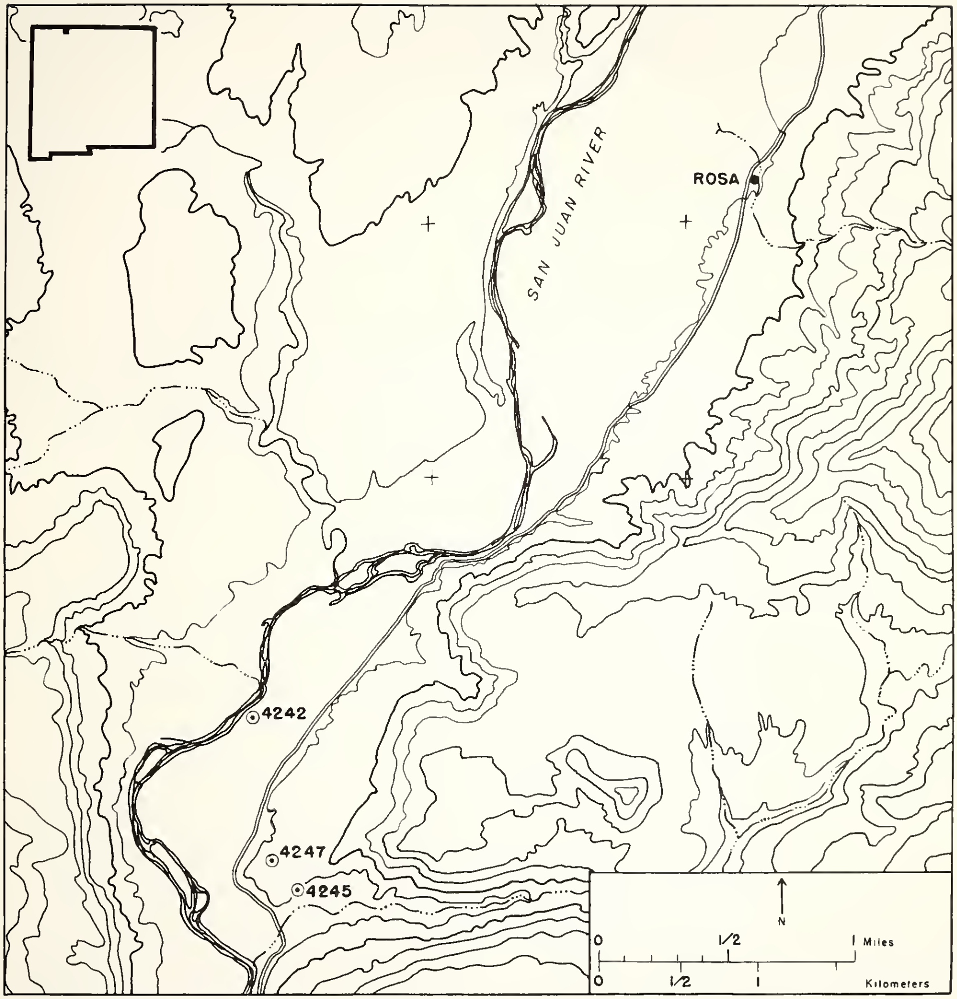

Fig. 1. Map of area southwest of Rosa, New Mexico, showing location of sites LA 4242, LA 4245, and LA 4247.

factors include demographic shifts. During the Rosa Phase, settlements were spread almost evenly throughout the Reservoir District. There are, usually, concentrations of sites in sections where large areas of the Recent terrace provided arable land. Entrenchment of the San Juan River apparently began shortly after A.D. 800 and proceeded upstream. The movement of people upstream, ahead of the entrenchment, is manifest in the distribution of sites in successively later phases. During the Rosa Phase, sites are scattered throughout the entire Navajo Reservoir District. During the Piedra Phase the population was concentrated in the Rosa Section of the District, while the larger number of Arboles Phase sites are upstream, on the Piedra and San Juan Rivers above Arboles, Colorado. Pueblo Period sites, later than Arboles Phase, are not found in the Navajo Reservoir District.

THE EXCAVATION OF LA4242

by HENRY C. GREMINGER
and BRUCE COX

SITE DESCRIPTION

Site LA 4242 is located on the east side of the San Juan River in the SE 1/4, SW 1/4, Sec.22, T 32 N., R 6 W., NMPM. It is slightly more than three miles south of Rosa, New Mexico, along a light-duty road which roughly parallels the San Juan River. About seven hundred feet to the north is another site structure which is considered contemporaneous with LA 4242.

The excavated units are situated on the Pleistocene (?) bench above the San Juan River; the long axis of the site is roughly parallel to the river course. Immediately west of the site, the bench slopes steeply toward the river. The dwellings, then, were placed on the westernmost level land at the edge of the first Pleistocene (?) bench. On the west side of the San Juan River, opposite LA 4242, is the river flood plain, or Recent terrace, which is suitable for irrigation farming at present.

Architectural features at LA 4242 include two pit houses and two surface structures (Fig.2). In addition, there is a large area of burials. The two pit houses are thirty five feet apart, from center to center, both dug into the heavy reddish-gray clay of the bench. Approximately thirty feet to the west of the smaller, or north, pit house (Feature 4), lies the north surface structure (Feature 3). From Feature 3, it is 175 feet to the center of the south surface structure (Feature 2). Southwest of Feature 2 is a burial area.

The flora and fauna are characteristic of a semi-arid region. Rainfall is between ten and fifteen inches per year. The first bench is covered with sagebrush and short grass which seem to have crowded out all other vegetation. During the day, while the site was being worked, very few fauna were in evidence. Occasionally birds were seen; a prairie dog burrow was noted. A more complete description of the environment may be found in Dittert, Hester, and Eddy (1961, Ch.2).

EXCAVATION TECHNIQUES

Surface indications of the two pit houses (Features 1 and 4) were shallow depressions in which there was an absence of sage cover. Pits, five feet square, were excavated in the center of these depressions, and were continued downward until the floors were found. The pits were then expanded laterally. When a wall was discovered, trenches were dug around the circumference, just inside the wall. The fill remaining in the center was removed with power equipment. Since the fill in both structures was due to erosional processes, rather than human deposition, it was not necessary to maintain stratigraphic controls. Final clearing of the floor was accomplished by hand. Pollen samples from the fill were taken near the center of the two pit houses at six inch intervals, beginning at the floor. In addition, tree ring samples were obtained from Feature 4. The processing of both items has not been completed, and, therefore, the results cannot be included in this paper.

Features 2 and 3, the two surface structures, were troweled in levels to the bottom of included rocks, assumed to be the floor level. Later, test trenches were dug transversely across both features. However, neither trench revealed pertinent information. A third test pit five feet square was started thirty five feet west of the north surface structure (Feature 3), in what was

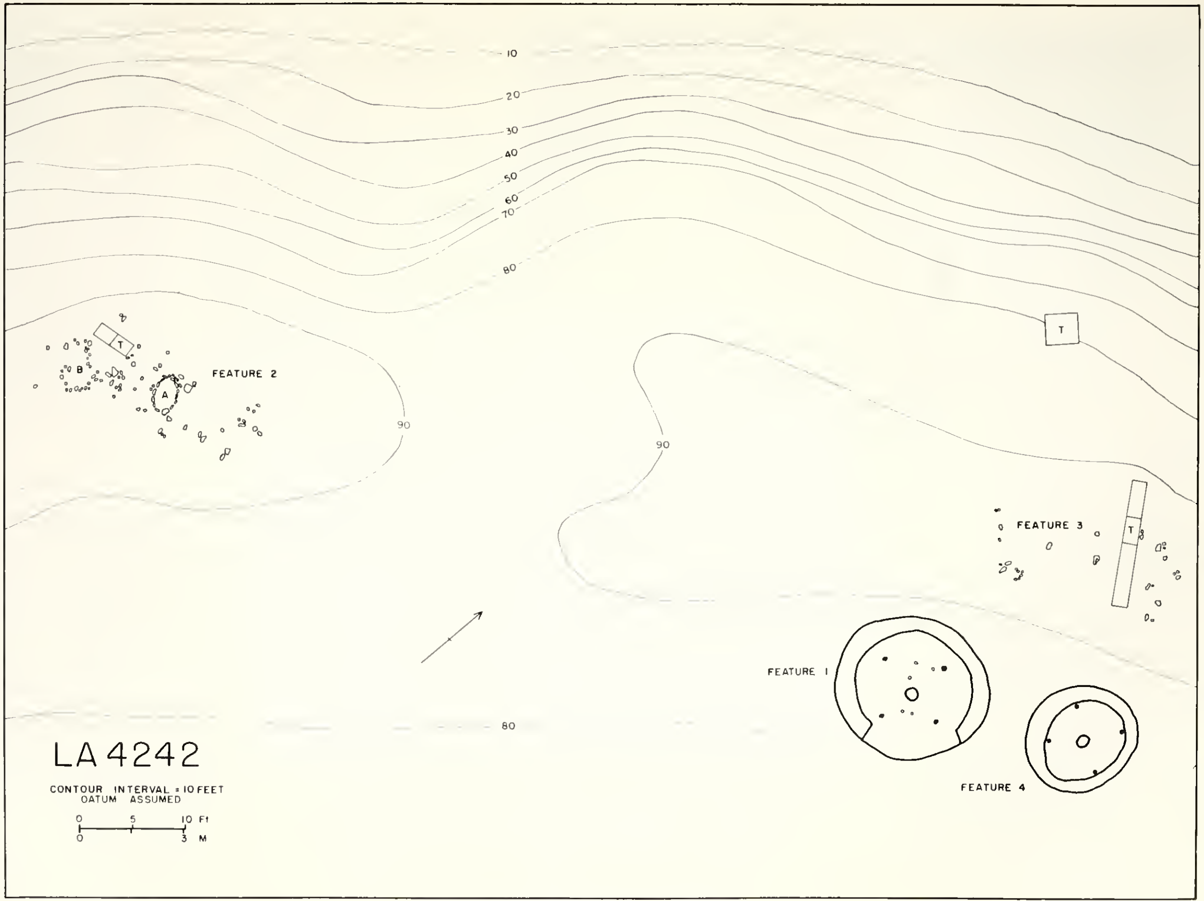

Fig. 2. Plan of LA 4242.

thought to be a pit house. This pit proved sterile, and was abandoned after a depth of 1.5 feet was reached.

Following the excavation of Feature 2, the back-hoe was used to remove a large portion of the feature. This was done because there were suggestions of an underlying structure. These indications proved to be misleading and only sterile earth was encountered.

EXCAVATED FEATURES

Feature 1

Feature 1, the largest of the two pit houses at the site, is circular in plan. Walls of the structure appear to have been vertical, but the nature of the upper portions was difficult to determine because of the amount of debris deposited over the unit. There are no signs of plaster on the walls, nor is there evidence of repairs following the original construction. The lack of plaster made excavation difficult, and the only manner of discerning the walls was to remove the fill until native earth was encountered.

The bench is horseshoe-shaped, and encloses about three fourths of the floor area. A small area on the top and on the face of the bench, in the south section of the pit house, exhibits the only plaster within the feature. The plaster is of light gray clay, and appears to be unfinished. The bench top also has five intentional ridges, which divide the bench into six sections. Starting at the south end, and moving clockwise around the bench, the spaces between the ridges become gradually smaller. Artifacts found upon the bench consist of an antler awl and two sherds of a small vessel.

The floor of the feature was as difficult to discern as the walls and bench. It is unplastered, and the break between native dirt and fill was merely a fine line of dark material. The floor shows practically no sign of use, but tends to be smooth, except in the southeast section. The entire floor slopes gently upward from the fire pit to the bench edge.

No ventilator was found. Possibly it was missed, due to the nature of the fill and native soil. The open space at the southeast side of the room, between the ends of the bench, would have been an ideal position for the structure. This area was troweled clean, but no indication appeared. In a similar structure, dug by Hall in the Gobernador, the ventilator is located in this section of the pit house (Hall, 1944, p.25).

The adobe-lipped fire basins, like the floor, were never plastered, and show little indication of use. Signs of burning are slight, and no ashes occurred within the basins. There is a small collar around the edge, and a river cobble rests in the bottom.

Four roof-support post holes are arranged in a square pattern. Each hole was filled with sand and rock, probably wedges for the roof-support posts. The northwest hole had three small animal bones in the fill, 0.8 feet below the floor.

Two shallow holes, possibly ladder rests, are located southeast of the fire pit. There are three other holes in the floor in the northwest section of the house, possibly sipapus. The fill of each hole was fine greenish sand. In one, a river cobble forms the base of the hole. Two of the holes are cylindrical; one has slightly undercut sides and a raised collar about the neck. Holes found in a pit house floor and filled with similar material are noted by Morris (1939, p.71).

Numerous small holes appear along the bench face and wall, but no general position or form is evident. Possibly, they were small bins or caches.

Artifacts found on the floor include: one metate and one mano which seem to be in association; one other mano; three hammerstones; one bone needle stuck in the floor; and twenty-one pieces of azurite (Fig. 4). No pottery was definitely associated with the floor. However, some sherds were taken from the fill, in the lay-

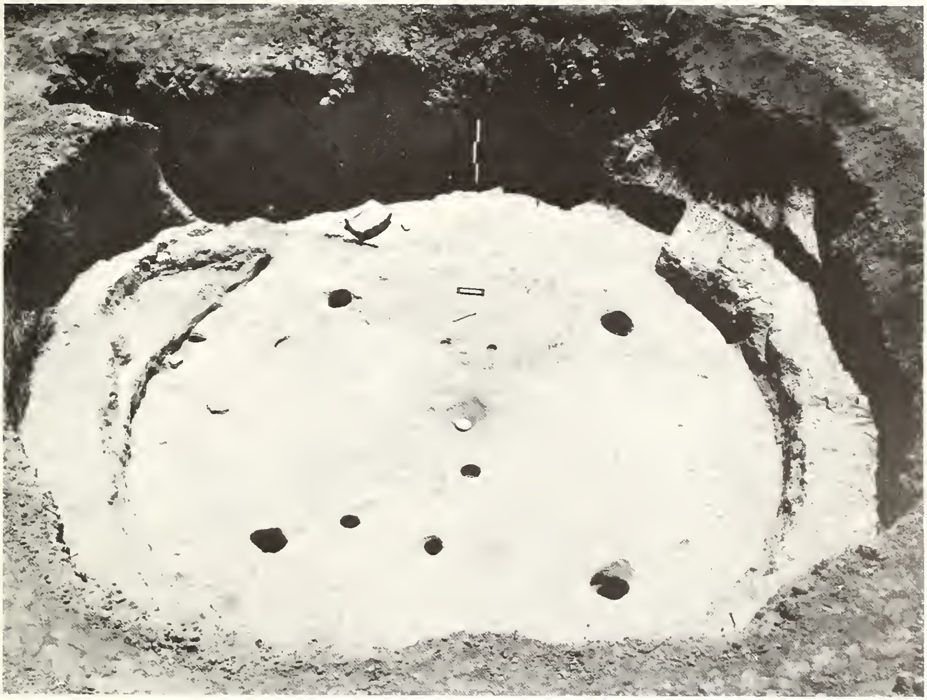

Fig. 3. View of Feature 1, LA 4242, looking southeast.

er just above the floor.

Feature 2

Attention was attracted to this feature by a large amount of exposed rock. Within the area there is one definite slab-lined structure, referred to as Structure A, and one possible cobble-lined structure, referred to as Structure B (Fig. 2 and 5).

Structure A is ovoid in shape. A rock outline is the only evidence remaining of the original structure. The rock base was formed by placing uniform-sized sandstone slabs on edge around the circumference of the structure. Inside the slabs, the floor is of hard-packed native soil. There is intrusion of charcoal in the floor. No artifacts were found in association.

Structure B is not as distinct as is Structure A. The stream cobbles forming the ring are inconsistent in alignment, and vary greatly in size. This structure is also ovoid in shape. However, it is larger than Structure A. The floor is the same as in the former, and no artifacts were found in association.

No evidence of walls or roof was found with either structure: but, due to their size and shape, it is thought that both were used for storage. The original survey noted burned corn in association with this feature. However, none was found during excavation. The remainder of the rocks cleared within the feature exhibited no distinct alignment.

Feature 3

Feature 3 (Fig. 2) is a surface structure. Surface indications consist of an irregular outline of rock, on or near the surface, and numerous pieces of roof clay showing pole impressions. The thirty to

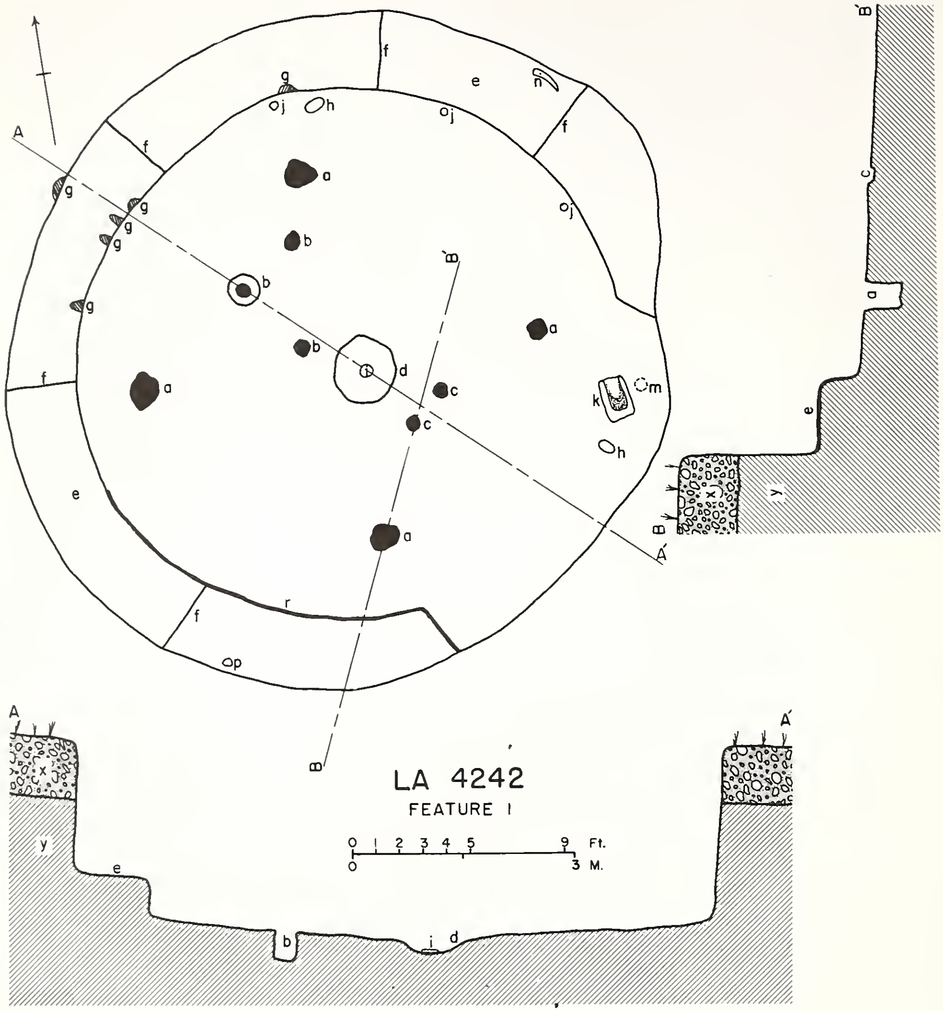

Fig. 4. Feature 1, LA 4242, plan and profile. a, post holes; b, sipapus; c, ladder rests; d, fire pit; e, bench; f, ridges on bench; g, caches or small bins in bench or wall; h, manos resting on floor; i, river cobble in fire pit; j, hammerstones on floor; k, metate on floor; m, location of azurite on floor; n, antler awl on bench; p, restorable pot on bench; r, area of plaster on bench; x, slope wash; y, sterile soil.

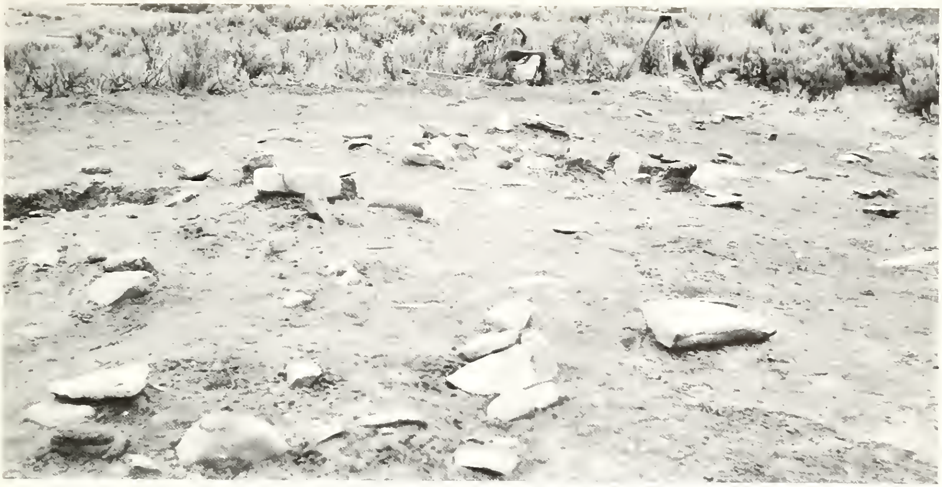

Fig. 5. View of Feature 2, LA 4242, looking north. Structure A in background, Structure B in foreground; test trench at middle left.

forty rocks that indicate the floor plan lie within a trapezoidal area, wider on the south than on the north side. There is a fairly straight alignment of stones south of the structure and a reasonably straight alignment to the north, with very few stones between the two lines. No post holes were discovered, although the whole structure was troweled by levels down to the bottom of the stones. The straight lines of stones north and south of the structure could only have been placed there intentionally, perhaps at the base of pole and mud walls. If they were jacal walls, the wall posts must have decayed rapidly, as no stains from decayed wood were encountered. The postulation of jacal walls, however, makes it necessary to account for both the absence of post holes and the absence of stones along two sides of the structure. Perhaps it is more logical to assume packed-clay walls, similar to those found by Morris in the La Plata region west of the site (Morris, 1939, p. 30). The structure had no definable floor. Often, it was impossible to discern a hard-packed fill within the structure, but this suggests a compaction of existing surface, rather than imported clay.

A metate fragment was found near the middle of the structure. In the northeastern corner was found the base of a Moccasin Gray vessel, filled with ashes and charred wood. Sherds of a restorable Rosa Brown vessel were scattered throughout. Feature 3 was probably a work and storage area, rather than a dwelling.

Feature 4

Feature 4 is a small circular pit house. A residual bench, left in the original excavations of the house, encircles the entire floor area. The bench wall, the house wall and, to some extent, the floor and bench top, show a pinkish color from being burned.

The floor is covered with adobe clay 0.2 to 0.3 feet thick. Except for its greater hardness, it is not much different from the underlying sterile clay soil. There is a rise of 0.5 feet between the floor level at the fire pit and that of the junction of floor and bench. In the center of the floor there is a circular clay-lined fire basin. The clay of the hearth is not badly scorched, and may have been lined with sand when in use.

Four post holes are arranged at 90° intervals around the circumference of the floor. They are from 0.2 feet to 0.5 feet from the bench wall. Some charred wood was found in each hole, and was preserved for dendrochronological dating. There is no evidence of a deflector, sipapu, ash pit, ladderholes, or ventilator.

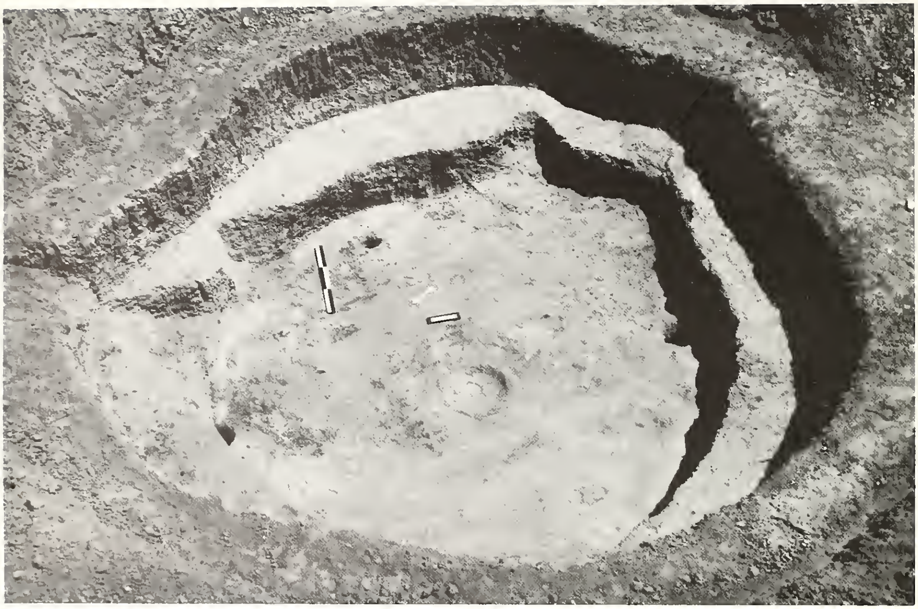

Fig. 6. View of Feature 4, LA 4242, looking southeast.

The pit house was filled with earth containing occasional sherds and pieces of charred wood. Charred roof timbers and clay were found in the foot of fill above the floor. At this level, seven metates also were found. They had apparently fallen from the roof, as there were pieces of charred wood beneath them. The fill indicates that this structure was both completed and occupied.

ARTIFACTS

Stone

GROUND STONE

Metates (14): 8 whole specimens; 7 troughs, one end closed; 1 slab; 6 trough fragments, 4 with closed ends, and 2 undiscernible as to whether the trough was complete or closed. All were of quartzitic sandstone, varying from rough to fine grain.

Manos (19): 13 whole; 6 fragments. Twelve are loaf shape, of which 11 are sandstone and 1 basalt. Two of these are two-handed, 7 are wedge or air-foil shape; 5 are sandstone; 1 granite; 1 basalt. One of these is two-handed. The composition of all specimens tends to be of a fine grain. Degrees of use vary, from slight to extensive.

Polishing Stones (2): 1 ovoid, granite stream cobble, only one side showing use; 1 flattened disc, igneous, with both top and bottom showing use.

Abrading Stone (1) (Fig. 8-j): Fragment of rough sandstone with one grinding surface. Bright red in color on exterior surface (could be possible paint abrader).

Pounder (1): Elongated sandstone, tapered to one end; definite signs of pounding on small end.

CHIPPED STONE

Hammerstones (5) (Fig. 8-k, l, m): 2 limestone, 1 igneous, 1 felsite, and 1 quartzite. Four are chipped around the entire circumference.

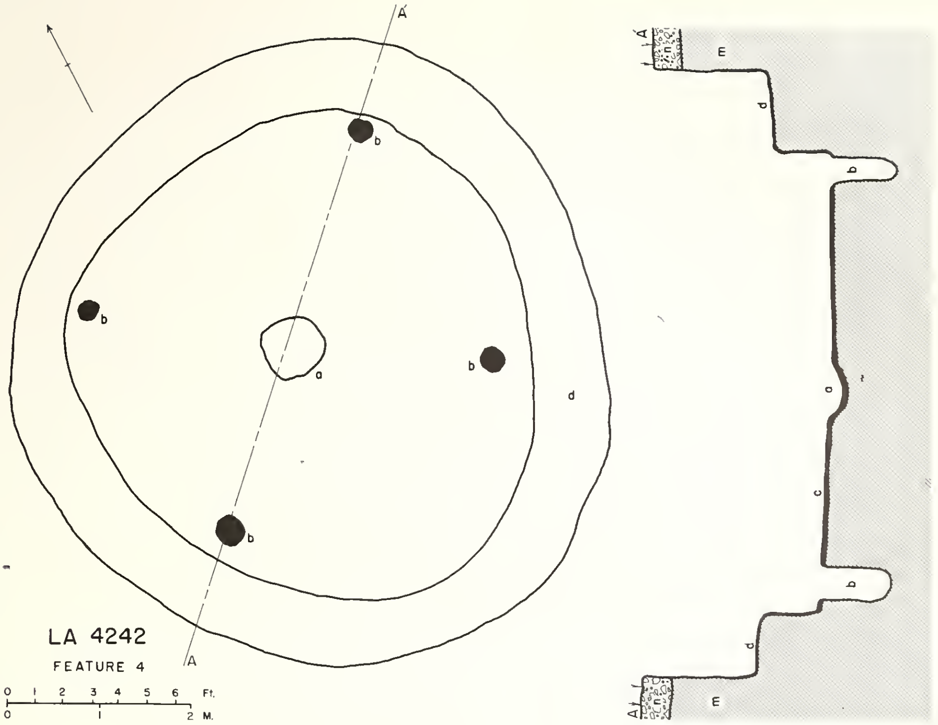

Fig. 7. Feature 4, LA 4242, plan and profile. a, fire pit; b, post holes; c, plastered floor; d, bench; m, sterile soil; n, slope wash.

Chopper (1): Conglomerate, convenient size to be held in hand, two edges ragged and battered.

Graver (1) (Fig. 8-f): Irregular flake of quartzite, two worked edges coming together to form a point.

End Scraper (1) (Fig. 8-i): Thick, irregular flake with retouched area away from plane surface.

Hollow-Edge Scraper (1) (Fig. 8-g): Irregular flake with one side retouched to a flat surface.

Knife (1) (Fig. 8-h): Primary flake of chert, long edge retouched.

Core (1): Shale, prismatic, with chips removed from length of stone.

Utilized Flakes (9): 6 quartzite, 2 igneous, 1 chert.

ORNAMENTAL STONE

Unperforated Stone (21): Pieces of azurite, possibly of a mosaic; all pieces were found together, but not arranged in any discernible design.

Bone

AWLS

Splinter Awls (3) (Fig. 8-a, b, c): Fragments from shafts of 3 large animal long bones. On two, the points are sharp and well-pointed; the body of one is small and broken--could have been hafted.

TABLE 1

SIZE OF FEATURES, LA 4242

(Measurements in Feet)

PIT HOUSES

Feature	Depth of Floor Below Surface	Maximum Diameter	Bench		Firepit		Firepit Collar	
			Width	Height	Diameter	Depth	Width	Height
Feature 1	9.0	28.0	3.0	1.5	4.5	0.58	0.5	0.05
Feature 4	6.5	22.5	2.5	2.0	2.2	0.5	---	----

Feature	Postholes		Ladder Holes			Sipapu	
	Diameter	Depth	Diameter	Depth	Separation	Diameter	Depth
Feature 1	0.6-1.3	1.4-1.9	0.6	0.2	1.8	0.7-0.8	0.5-1.25
	(4 examples)					(3 examples)	
Feature 4	0.4-0.6	2.0-2.5	---	---	---	------	------
	(4 examples)						

SURFACE STRUCTURES

Feature	Length	Width	Size of Outline Rocks
Feature 2			
Structure A	7.0	5.0	1.0 X 1.5
Structure B	10.0	6.5	Random
Feature 3	35.0	15.0-22.0	Random

Antler Awl (1): Large antler, with hole drilled 5.0 inches from large end. Possibly used as chipping tool.

Needle (1) (Fig. 8-d): 2.7 inches in length, point finely finished. However, no hole drilled in stem; possibly unfinished.

WORKED BONE

Whistler or Tinkler (1) (Fig. 8-e): Jackrabbit (Lepus sp.) leg bone, broken in half. Semi-polished with small hole drilled halfway through specimen near proximal end. Martin (1938, pp. 424, 425) defines the object as a whistle: O'Bryan (1950, p. 87) defines it as a tinkler, or item worn about the neck.

Ceramics

A total of 1,547 potsherds, including four incomplete vessels, was recovered from the four structures and one burial excaved at site LA 4242. For purposes of discussion, the pottery is grouped into the following broad categories.

1. Tusayan Gray Ware	87.9%
2. San Juan Brown Ware (Provisional)	1.0%
3. San Juan White Ware	1.9%
4. San Juan Red Ware	1.6%
5. Mesa Verde Gray Ware	7.7%

The provenience of types, of each of the five wares, is given in Figure 10, by floor levels within the structures. The pottery inventory of this site is quite similar to that reported by Dittert (1958, p. 13) for the Rosa Phase (A.D. 700 to 900) occupation of this area, except for the presence in this site of Piedra Black-on-White, and a provisional type, Arboles Gray.

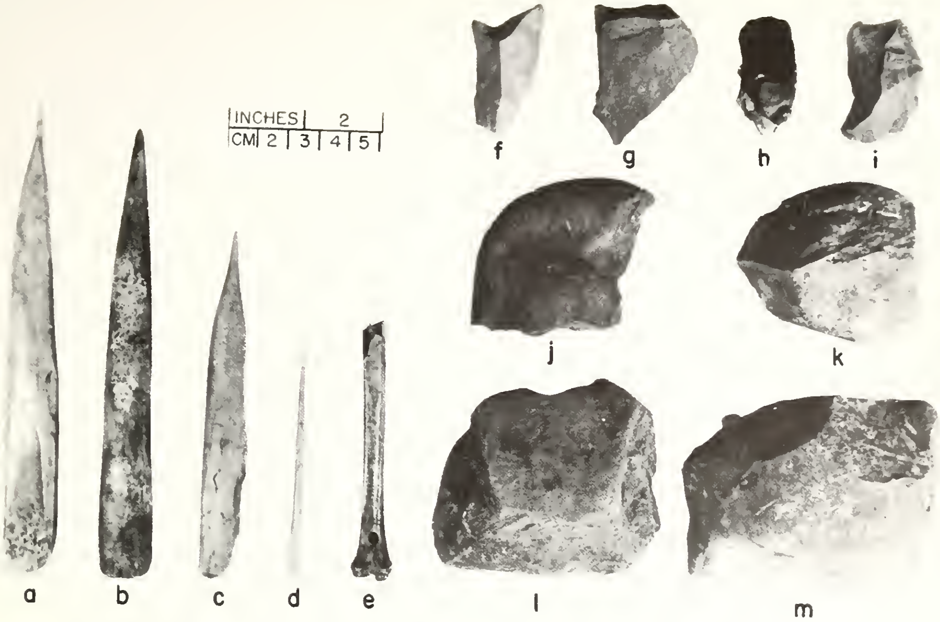

Fig. 8. Bone and stone artifacts from LA 4242. a, b, c, splinter awls; d, bone needle; e, bone whistle or tinkler; f, graver; g, hollow edge scraper; h, flake knife; i, end scraper; j, abrader, k, l, m, hammerstones.

Note: Following percentages are of total sherd collection.

1. Tusayan Gray Ware (Hall, 1944, p.31-36) 1359 sherds:

Rosa Gray	85.1%
Rosa Neck-banded	1.0%
Arboles Gray	1.3%
Rosa Black-on-White (carbon)	0.4%
Rosa Black-on-White (glaze)	0.1%

Rosa Gray pottery types, either plain, neck-banded, or decorated (Fig. 11-a, c, d, f) predominate in the sherd assemblage of this site. This heavy utility ware, tempered with heterogeneous river sand, is one of the principal indicators of the Rosa Phase in the San Juan-Piedra region.

Arboles Gray and Rosa Gray sherds are similar in surface color and general appearance. Arboles potters, however, used a prepared, crushed-rock temper which gives their sherds a more coarse texture than the sand-tempered Rosa vessels. Stratigraphically, Arboles Gray occurs in later deposits than does Rosa Gray. However, it occurs also intermixed with Rosa Gray sherds in the earlier Rosa Phase levels.

On the bench floor of Feature 4, an incomplete Rosa Gray jar was found, one sherd of which bore a heavy lug. The complete vessel probably was ten inches high by about eight inches at its greatest diameter. The base of a Rosa Gray pot, showing basketry impressions, was recovered (Fig. 10-e) in the fill of Feature 1. Hall (1944, p.34), notes that many of the Rosa Gray pots were started in baskets.

2. San Juan Brown Ware (Provisional) (Hall, 1944, pp.34-35) 16 sherds:

Rosa Brown	1.0%

Rosa Brown differs from Rosa Gray in its reddish-brown color; its fine temper may be compared with the random temper of Rosa Gray. Hall (1944) considered

DESCRIPTION AND PROVENIENCE FOR ARTIFACTS FROM LA4242

PROVENIENCE	ARTIFACT TYPE	MATERIAL	DIMENSIONS 1/10′		
FEATURE 1 (FILL)	TROUGH METATE	SANDSTONE	17.5	13.0	3.7
"	" (FRAG)	"	-	-	-
"	" "	"	-	-	-
"	" "	"	-	-	-
"	" "	"	-	-	-
"	MANO	"	9.0	3.3	1.8
"	"	"	8.0	5.9	1.5
"	"	"	7.6	4.5	1.7
"	"	"	5.6	3.4	1.0
"	"	"	3.7	2.3	0.7
"	"	"	5.7	4.0	1.0
"	"	"	6.8	3.4	1.4
"	" (FRAG)	"	-	-	-
"	" "	"	-	-	-
"	" "	"	-	-	-
"	" "	BASALT	-	-	-
"	"	"	7.3	2.8	1.3
"	"	GRANITE	11.6	5.9	2.5
"	HAMMERSTONE	QUARTZITE	2.3	1.8	1.4
"	"	IGNEOUS	3.5	2.1	1.8
"	POLISHING STONE	GRANITE	5.5	3.0	2.0
"	ABRADING STONE	SANDSTONE	2.4	1.9	0.7
"	POLISHING STONE	IGNEOUS	3.3	2.9	0.9
"	POUNDER	QUARTZITE	6.8	1.3	1.6
"	CHOPPER	CONGLOMERATE	5.9	4.9	1.1
"	GRAVER	QUARTZITE	1.8	1.0	0.4
"	END SCRAPER	"	1.8	1.1	0.7
"	CORE	SHALE	2.4	1.4	1.3
"	KNIFE (FLAKE)	CHERT	1.6	0.8	0.2
"	AWL	BONE	4.6	0.6	0.2
"	"	"	5.8	0.8	0.2
"	"	"	6.1	0.7	0.2
"	WHISTLE	"	3.5	0.4	0.4
FEATURE 1 (BENCH)	AWL	"	14.0	2.0	2.0
FEATURE 1 (FLOOR)	HOLLOW EDGE SCRAPER	QUARTZITE	1.9	1.4	0.7
"	HAMMERSTONE	LIMESTONE	2.5	2.1	1.4
"	"	"	2.8	2.1	1.1
"	"	FELSITE	2.5	2.4	2.2
"	MANO	SANDSTONE	5.4	3.3	1.0
"	"	"	6.2	3.0	0.7
"	TROUGH METATE	"	23.0	16.5	5.0
"	NEEDLE	BONE	2.8	0.2	0.1
FEATURE 3	TROUGH METATE (FRAG)	SANDSTONE	-	-	-
FEATURE 4 (FILL)	MANO	"	9.4	5.0	1.9
"	"	"	7.8	4.5	1.4
"	"	"	10.2	5.3	1.9
"	SLAB METATE	"	22.3	12.0	5.0
"	TROUGH METATE	"	17.8	14.0	4.9
"	"	"	20.0	16.7	3.5
"	"	"	22.2	13.0	3.2
"	"	"	22.5	16.3	5.4
"	"	"	22.3	16.5	4.8
"	"	"	20.5	15.0	4.8

Fig. 9. Description and provenience for artifacts from LA 4242.

Rosa Brown to be earlier than Rosa Gray.

Some Rosa Brown sherds were found in all but Feature 2 of the four structures on the site. In Feature 3 seven sherds of a small, restorable Rosa Brown vessel were recovered.

3. San Juan White Ware (O'Bryan, 1950, p.107) 29 sherds:

Piedra Black-on-White (glazed)	0.7%
Piedra Black-on-White (iron)	1.2%

All the Piedra Black-on-White sherds came from Features 1 and 3 (Fig. 10). Piedra Black-on-White is similar in surface color and design to Rosa Black-on-White (Fig. 11-b, e). O'Bryan (1950, p. 107) found Piedra Black-on-White the common decorated type in the later part of his Chapin Mesa Phase (A.D. 700 to 900) sites in the Mesa Verde District.

4. San Juan Red Ware (Abel, 1955) 24 sherds:

La Plata Black-on-Red	0.2%
Bluff Black-on-Red	1.4%

La Plata Black-on-Red differs from Bluff Black-on-Red only in that it has a red slip over a reddish surface; the Bluff type is unslipped. O'Bryan (1950, p. 107) found La Plata and Bluff Black-on-Red in the Chapin Mesa Phase, ending in A.D. 900, and persisting into the Tenth Century. As O'Bryan has La Plata and Bluff Black-on-Red lasting around two centuries, they cannot be used to date this site.

5. Mesa Verde Gray Ware (Abel, 1955) 119 sherds:

Chapin Gray, Chapin Variety	0.2%
Chapin Gray, Twin Trees Variety	0.1%
Moccasin Gray	7.4%

The Twin Trees Variety of Chapin Gray (Abel's "Twin Trees Plain") differs

	ROSA GRAY	ROSA NECK-BANDED	ARBOLES GRAY	ROSA B/W. CARBON	ROSA B/W. GLAZE	ROSA BROWN	PIEDRA B/W. GLAZE	PIEDRA B/W. IRON	LA PLATA B/R	BLUFF B/R	CHAPIN GRAY	CHAPIN G., TW TR VAR.	MOCCASIN GRAY	TOTAL
FEATURE I. SURFACE	40													40
FILL	917	12	17	6		4	7	13	3	21	1		3	1004
FLOOR	107	2					1						7	117
FEATURE 2, SURFACE	138		1		1						1			141
FEATURE 3, SURFACE	75	2	2			7		5			1		26	121
FEATURE 4, FILL	23					1						1		25
FLOOR	10												78	88
FEATURE 5, FILL	6					4					1			11
TOTAL	1316	16	20	6	1	16	11	18	3	21	3	2	114	1547

Fig. 10. Provenience for pottery types from LA 4242.

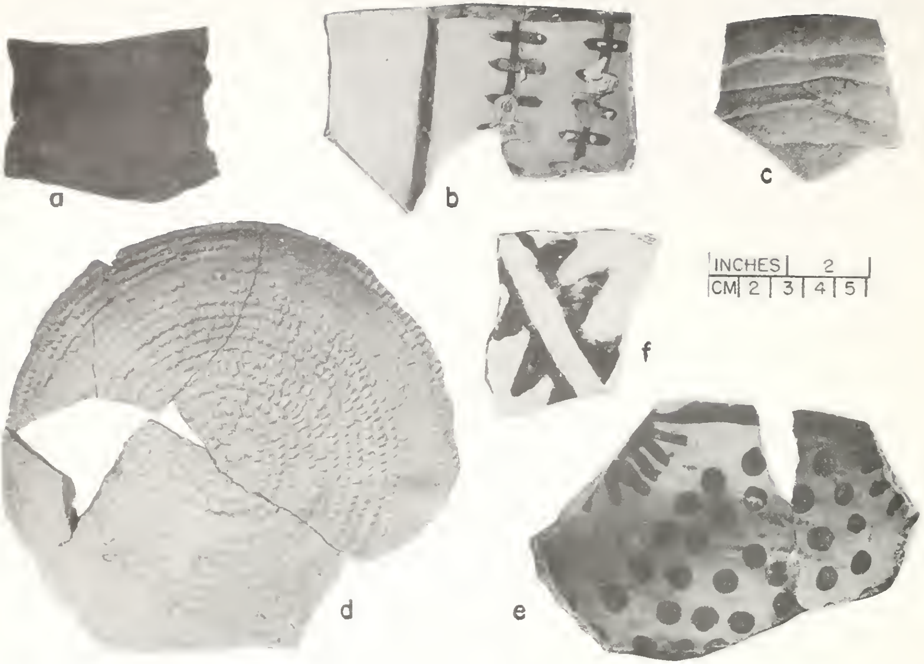

Fig. 11. Sample of pottery from LA 4242. a, c, Rosa Neck Banded; b, Piedra Black-on-White Glaze; d, bottom of Rosa Gray vessel showing basketry impressions; e, Piedra Black-on-White Iron; f, Rosa Black-on-White.

from the Chapin Variety only in that it has a polished surface. Moccasin Gray sherds have a coarser surface texture than the Chapin Varieties; the rim and neck sherds show banding. In Feature 3, fourteen sherds of a restorable Moccasin Gray vessel section were recovered, along with eleven non-restorable body sherds and three non-restorable banded-neck sherds from the same pot.

Most of the pottery types found in this site except for La Plata and Bluff Black-on-Red, and Arboles Gray, have terminal dates around A.D. 900. The newly-identified Arboles Gray probably appeared at the end of the Rosa Phase (ca. A.D. 900); the San Juan Red Ware was used until A.D. 1000. Since it is not definitely known when the Arboles type was first manufactured, it is not possible to establish a definite terminal date for the site's occupation.

Abel places the Chapin Variety of Chapin Gray in the Basket Maker III-Pueblo I times (A.D. 450 to 900), and places the Twin Trees Variety in the same cultural period, but ending in A.D. 850. Moccasin Gray is associated with a Pueblo I occupation extending in time from A.D. 800 to 900. The presence of these ceramic types suggests occupation no later than Pueblo I time for the entire site.

BURIALS

Five burials were located on the site, all grouped in an area forty feet square, seventy-five feet to the southwest of Feature 2 (Fig. 1). Of these remains four are adults and one an infant. All were found six to twelve inches below the present surface level. There is evidence of more burials in this area. However, none was located because of limited time. All previously had been disturbed by vandals. No artifacts or offerings were found in association with

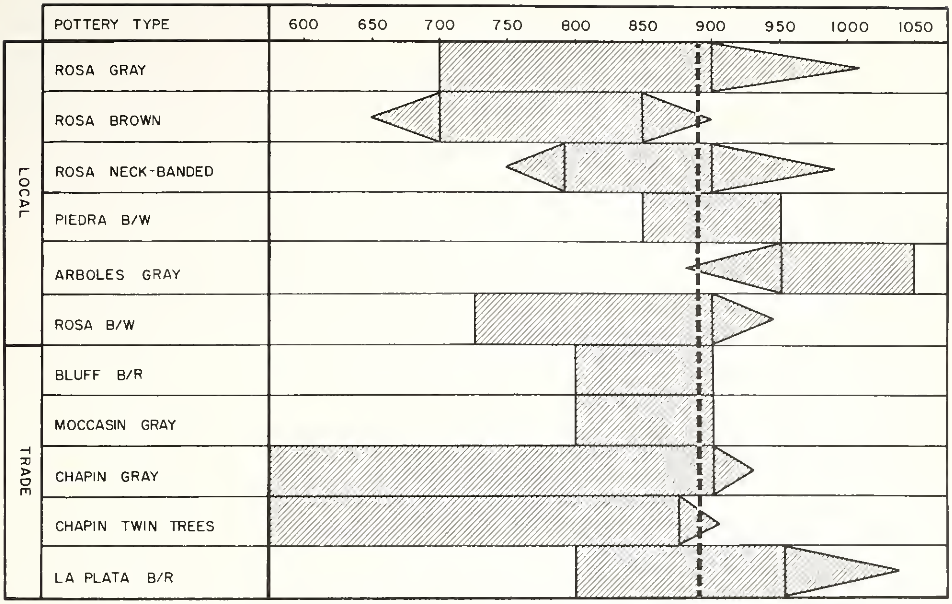

Fig. 12. Ceramic time span for pottery collected at LA 4242. Beginning and terminal dates for various types from Dittert (1961). Dotted line plus and minus 30 years approximates the site date.

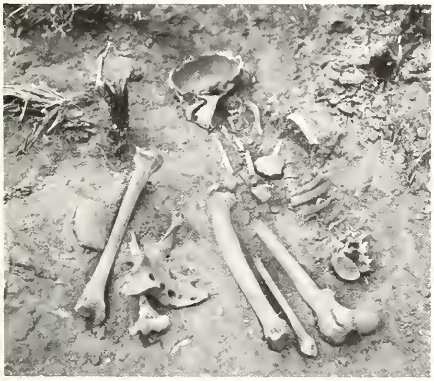

Fig. 13. Burial 1, LA 4242, looking north, previously disturbed by vandals.

the burials. Only one of the five was excavated completely (Fig. 13).

Burial No. 1, that of a young adult, was found lying 0.65 feet below the surface. The body rested on its side, facing east, its length in a north-south axis. It was tightly flexed, with hands folded under the chin. The lower part of the body had been disrupted, but enough evidence is present to show knees were drawn up to chest.

DISCUSSION

Architecturally, site LA 4242 may be catagorized, according to Hall (1944) as "the Peripheral Anasazi". Features found here are very similar to those found by Hall in the Gobernador. Structural traits place the time period in Early Developmental Pueblo, between A.D. 800 to somewhat after A.D. 900.

The smaller pit house seems to antedate the large one. This assumption is based upon the different pottery types found in each house. It is apparent that both pit houses were used as dwellings. General domestic functions were accomplished in the pit house, and the surrounding surface structures served as storage and work areas. An interesting note on the surface structures is that both are located on the highest ground in the area, providing for maximum drainage.

THE EXCAVATION OF LA4245

by G. EDWARD EVANS

and VINCENT P. FOLEY

SITE DESCRIPTION

Site LA 4245 is located in northwestern New Mexico, in the NW 1/4, SE 1/4, Sec. 27, T 32 N., R 6 W. The site is on a mesa, locally known as Julio Mesa, about four miles south of the village of Rosa on the east side of the San Juan River. The mesa is slightly over 6,000 feet above sea level.

On the east side of the San Juan River, the land rises in two sharp Pleistocene (?) benches. The first ascends slowly from the Recent terrace, and then levels out to form a bench approximately 900 feet in width. Here and there it is cut by fairly well-formed arroyos which carry the seasonal runoff to the San Juan River. The second bench rises fairly sharply from the first, to an average height of about 120 feet above the river. This bench takes the form of a mesa, with steep sides on the south and west. On the north side it slopes gradually down to the first bench, on the east it merges with the rising hills behind. The second bench, which here projects towards the San Juan River, is cut by an occasional incipient arroyo towards the southern edge.

Site LA 4245 is situated on the southern third of the mesa. There were indications here of several prehistoric structures. Two adjacent areas (Fig. 15) showed pronounced pit house depressions, aligned on an east-west axis. Around these were several depositions of stones indicating at least three accompanying surface structures; one of which, Feature 2, displayed a profuse covering of burned adobe.

FIELD METHODS

The work period was extremely limited, and labor somewhat undependable, so investigations were planned to obtain the most information in the shortest time. As a result, two structures were only partially excavated. The excavations were jointly supervised by the two authors, assisted by five laborers from the neighboring communities of Rosa, New Mexico and Ignacio, Colorado. During actual excavations, Foley supervised the work on Feature 1; Evans, Feature 3. Work on the surface structures was, usually jointly directed. Evans had the predominant role of Features 4 and 5; Foley, Feature 2.

When the survey was completed, the depressions of the pit houses (Features 1 and 3) were cleared of vegetation. The predominant cover of sagebrush was removed easily by hand and shovel; a shaft four by six feet was dug in the center of Feature 3 depression, and one five feet square excavated in the depression of Feature 1. In the latter, floor was reached 6.45 feet below the surface. A buffer zone, about 0.9 feet of fill, was left on the floor of Pit House 1 to prevent damage by the workmen. The purpose of these test pits was threefold: a) to verify the existence of a prehistoric structure; b) to supply information as to the nature of the fill; and c) to establish the depth of the structure's floor. Clearing of the surface of Features

2, 4, and 5 was accomplished concurrently with the excavations of the pit houses.

In this District, pit house floors may be covered with as much as six or seven feet of fill, all of which is post-occupational. Hence, it may be removed quickly with a back-hoe.

When a floor was reached, horizontal trenches were initiated from the original shafts in search of a wall. This procedure was only partially necessary in Feature 1, as the northwest corner of the shaft exposed the top of a bench. A trench was then dug southward to find the opposite wall. When the first trench failed to reveal a wall, a second diagonal trench became necessary, which exposed a well-plastered wall.

The test shaft of Feature 3 encountered the floor at a depth of 6.1 feet. A fire pit was exposed in the southern half of this shaft. An exploratory trench, approximately 3.0 feet in width and kept about 0.65 feet above the floor, was started in a northerly direction from the test shaft. It encountered the north wall about 7.5 feet north of the fire pit. At this point, work on this feature was interrupted.

When available, the back-hoe was utilized in two ways. First, it accomplished the initial removal of fill; secondly, as the excavations neared important or delicate features, the back-hoe was used simply as a dirt removal machine for the soil dislodged by hand. When these features were observed, all clearing work was done with a hand pick and trowel. The buffer zone on the floor served its purpose well, and was removed last, also by small hand tools.

Soil samples were taken every six inches from the floor to the surface. Samples of burned or charred beams and posts were taken for dendrochronological study. Where present, burned adobe also was collected for chemical analysis.

Artifacts were collected and recorded under two major headings. First, as there was no clear stratification of the fill, all specimens acquired were lumped to-

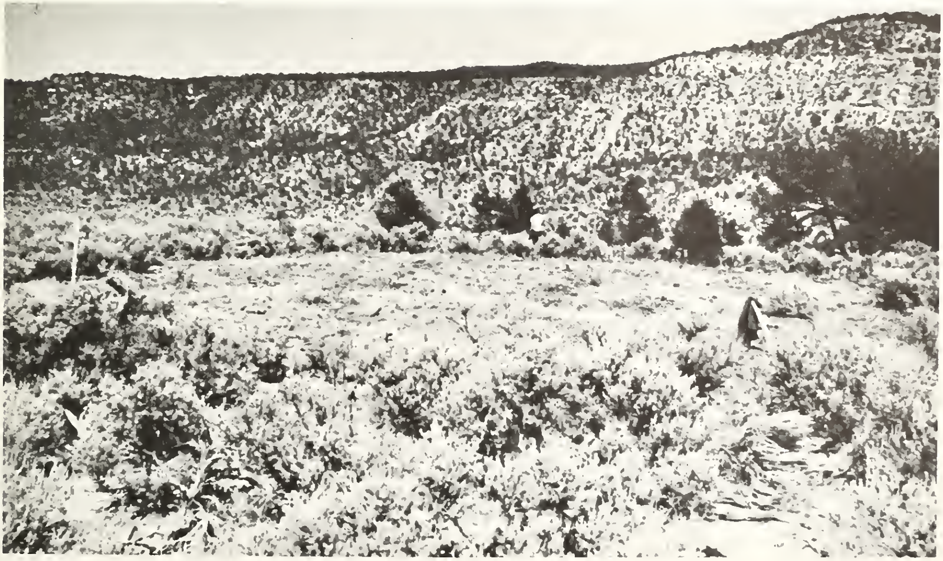

Fig. 14. Pre-excavation view of LA 4245 after clearing of vegetation.

gether and so marked. The second category included all artifacts in direct contact with the floor and bench. These received attention as to exact locations, which were noted.

Features 2, 4, and 5, were all presumed to be surface structures. Areas near each were covered with concentrations of stones, suggestive of human placement or the results of human occupation. Feature 4 had the most unpatterned distribution of stones. Excavations here revealed no structure outlines of any sort to depths from 0.3 to 0.5 feet. In addition to an arrangement of large flat cobbles, Feature 2 was also covered with a layer of burned adobe, large pieces of which were collected for chemical analysis.

When excavating Feature 2, several inches of fill were removed, exposing a surface that appeared to be a well-preserved floor. However, the cross-section of a subsequent trench showed well-preserved "floors" for a depth of 1.6 feet. It then became clear that the "floors" were naturally laid and compacted lenses of clay. Work was returned to the exposed top level. An area about 14.0 by 11.5 feet was cleared. This was the extreme limit of burned adobe deposits. No other stones were encountered that suggested walls or corners, and no post holes were found. Further excavation on this feature was abandoned.

Feature 5 displayed a series of upright stones at right angles. Excavations within the confines of these rocks revealed no structural evidence. A group of stones just south of this feature was explored. It was felt that this grouping was contiguous with any structure the upright stones might represent. A fire pit was exposed, with concentrations of charcoal and split stones. Uncovering a four foot square area to a depth below the charcoal level did not show any other cultural features.

Only three days of the field season remained, not sufficient time for complete excavation. It was decided that this time might best be used in excavating the southern half of Feature 3. Use of the back-hoe, the small size of the structure, and the well trained labor force permitted complete excavation. The entire feature was cleared, cleaned, and photographed in two and one-half days. The short time remaining was spent in trying to locate the ventilator, but with no success.

ARCHITECTURE

Feature 1

Feature 1, a pit house, is the largest identifiable structure at the site (Fig. 15, 17, 18, 19). In plan, it is slightly ovate with the larger diameter on an east-west axis.

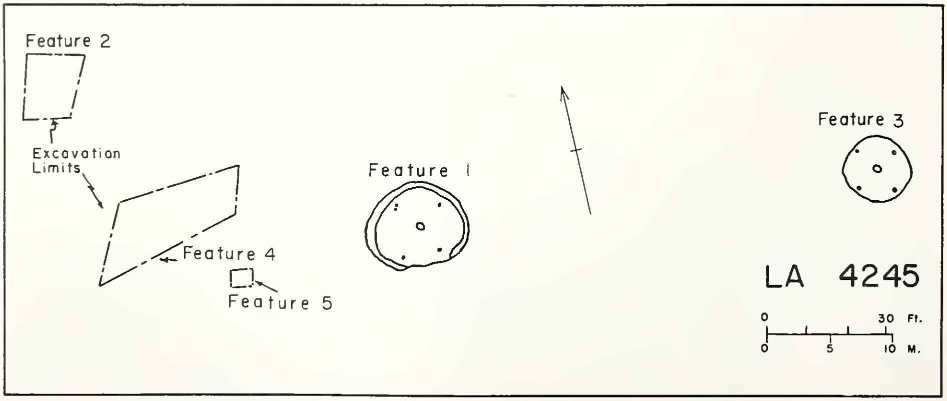

Fig. 15. Plan of LA 4245.

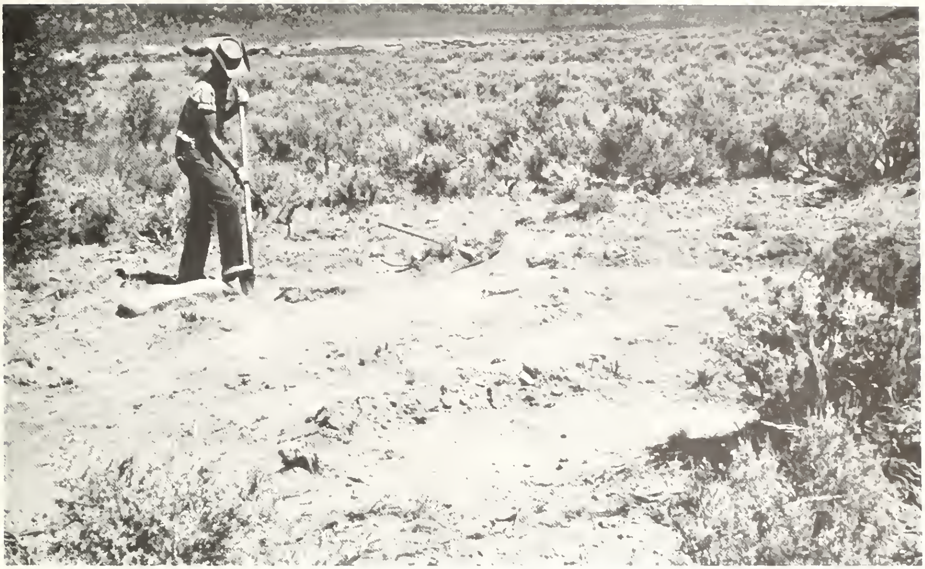

Fig. 16. View of test trench into Feature 2, LA 4245, looking west.

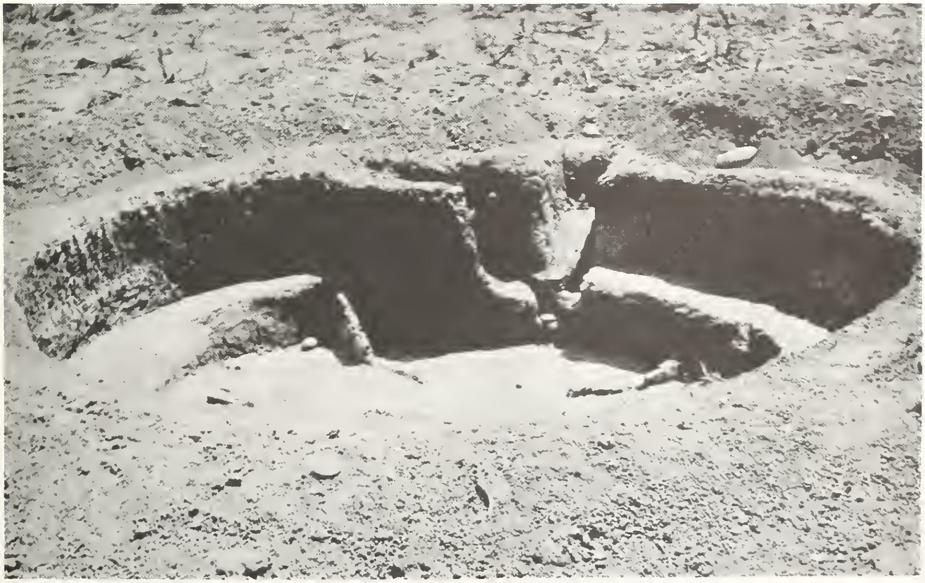

Fig. 17. View of Feature 1, LA 4245, looking south.

The walls are of plaster over native sand, and are, for the most part, well preserved. In places, they have been fired to a black or red color. Other areas of the wall are gray, green, and blue; but there is no definite arrangement of the colors.

There are two floors in the structure, both of gray clay. The lower one rests on sterile earth and is continuous over the floor space of the pit house. The upper floor is discontinuous. Where present, it is separated from the lower floor by a thin layer of burned material. The lower floor continues under a portion of the bench, in contrast to the upper floors' merging with the face of the bench.

Floor features include a hearth, partition walls, and five roof-support post holes. The hearth is an ovate-shaped, adobe-lipped fire basin, located slightly south of the center of the floor. The basin was partly filled with ashes at the time of excavation.

The partition, at the south end of the pit house, consists of two low curved walls approaching each other from the bench on opposite sides of the structure. An arc is described, broken only by a two-foot interval centered on the line between the hearth and the ventilator. As a result, an elliptical area of the floor is set off. This section of the floor is further differentiated in that it is about 0.12 feet lower than the remainder of the floor. The partition walls are plastered, and are wider at the base than at the apex. There are two plastered holes in the partition walls; one at each junction of the walls and the bench. A draft from the ventilator would be directed toward these holes.

Basically, there is a four-post roof system. Two of the posts have been incorporated into the partition walls; the other two are in the northern half of the pit house. The four posts are arranged in a square pattern. A fifth post hole is adjacent to the northwest roof-support post hole. Proximity of the two suggests either resetting of the post, or the addition of another post to assist in support of the roof.

A bench, cut from the native earth, encloses about five-sixths of the floor perimeter. There is considerable variation in the width of the bench between the north side of the room and sections at the south side. Apparently, the bench has been placed on the face of the bench and the lower floor continues under the plaster.

The wall in front of the ventilator, a continuation of the bench face, has a pronounced bulge between the two ventilator openings. The ventilator is of the bifurcate-opening type, the horizontal shafts meeting directly under the oval-shaped vertical shaft. The walls and the sills in the horizontal shaft have been plastered.

A small wall niche, a minor feature, is located just above the bench in the northeast section of the structure. It is not plastered, but was filled with fine ash when found.

The presence of two floors separated by a lens of charcoal, the remodeling of the bench, and the additional roof support post hole, suggest that the structure had been burned at one time; rebuilt and reoccupied at a later date; and burned again. It was not reoccupied after the second burning. The character of the fill does not indicate that people lived at the site after the destruction of Feature 1: the fill was undifferentiated as to deposition, except for the top 0.35 feet of recent aeolean and alluvial deposit. Below the top layer, the fill consists of brown clay permeated with small pieces of charcoal, a few sherds, and river cobbles. One exceptionally large river cobble occurred on the floor, next to the east hole in the partition wall (Fig. 19-u), and may have served as a damper plug.

Feature 2

The surface indications of Feature 2 included several large stones, suggesting a structural arrangement with the intervening area littered with large pieces of burned adobe. It is possible that a jacal surface structure existed here, but excavations failed to reveal a floor, walls, or other features.

Feature 3

Feature 3 (Figs. 15, 20, 21) is a pit house, but smaller than Feature 1. In plan, it is almost circular with somewhat of a diamond-shape. The walls are unplastered sterile earth and were not sharply divided from the fill.

A shallow fire basin is located slightly south of the floor center, and at the time of excavation, was filled with fine red and black ash. Immediately south of the fire basin is a sandstone slab that may have been a deflector, though a floor socket for it was not found.

The roof of the pit house was supported by four posts, arranged in a square pattern. From the center point of the room, the post holes are toward the interordinant points. None of the post holes have stones at the bottom.

Feature 3 does not have a bench. The excavation revealed no ladder post holes nor evidence of a ventilator. No indication of a partition wall is present.

The fill of Feature 3 was characterized by a uniform light brown color, except for the recent six inch deposit of the top. Cultural remains in the fill were scarce; only a few sherds and unworked bones were found.

Feature 4

The presence of cultural material west of Feature 1 led to the excavation of a trapezoidal-shaped area. Although use of the surface in this area is evident from the burned adobe, sherds, and charcoal, no walls, floors or other features were found. There is no conclusive evidence that a structure existed at this spot.

Feature 5

This feature was excavated because the presence of upright stones suggested a wall. However, no further evidences of walls were found; a definite floor did not come to light.

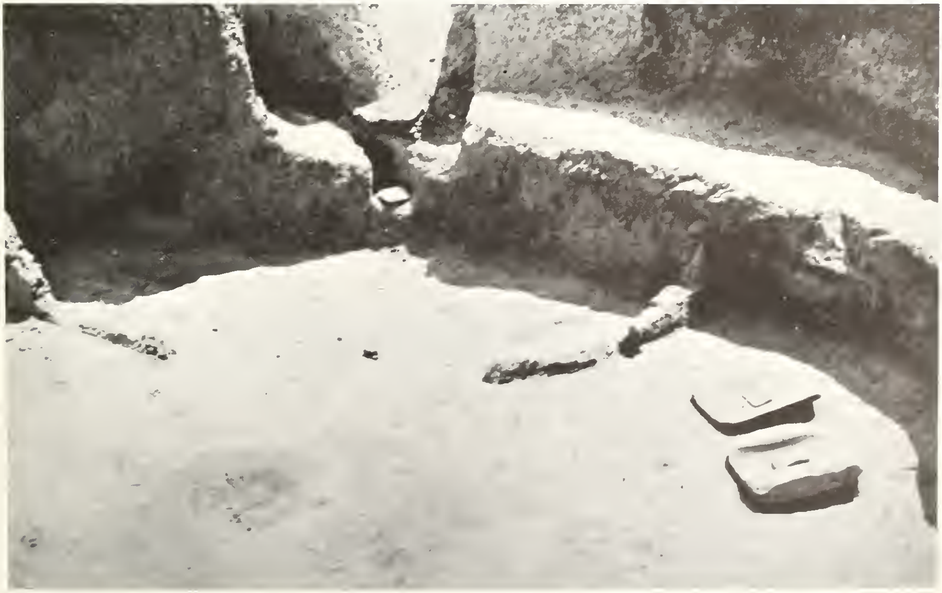

Fig. 18. Detail view of ventilator system in Feature 1, LA 4245.

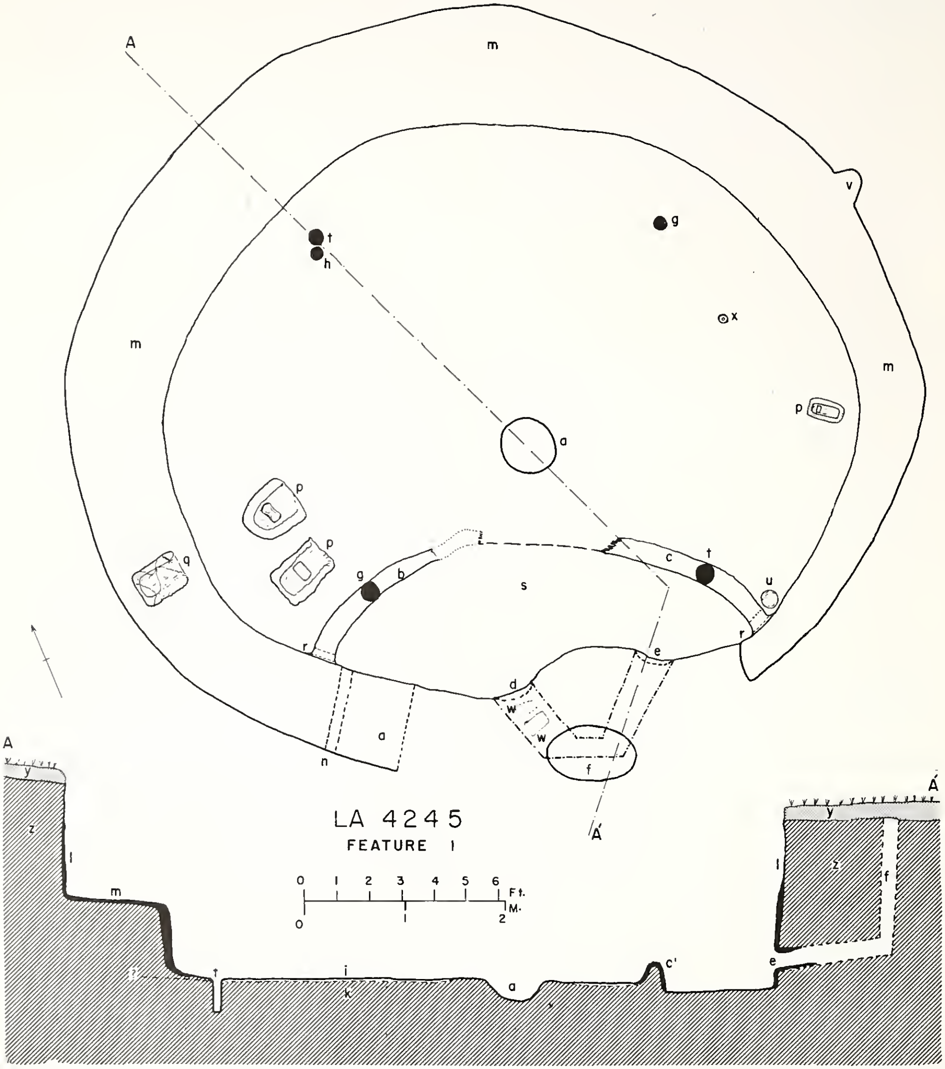

Fig. 19. Feature 1, LA 4245, plan and profile. a, fire pit; b, southwest wing of partition wall; d, west ventilator opening; e, east ventilator opening; f, ventilator shaft; g, post holes; h, reset (?) post hole; i, second or top floor; k, earlier floor; l, outer wall, plastered; m, plastered bench; n, bench divider wall; o, storage area (?); p, metates with manos; q, metate from roof; r, damper holes; s, lower floor area; t, post holes with remains of posts; u, damper plug; v, wall niche; w, manos in ventilator; x, pot neck; y, slope wash; z, sterile soil.

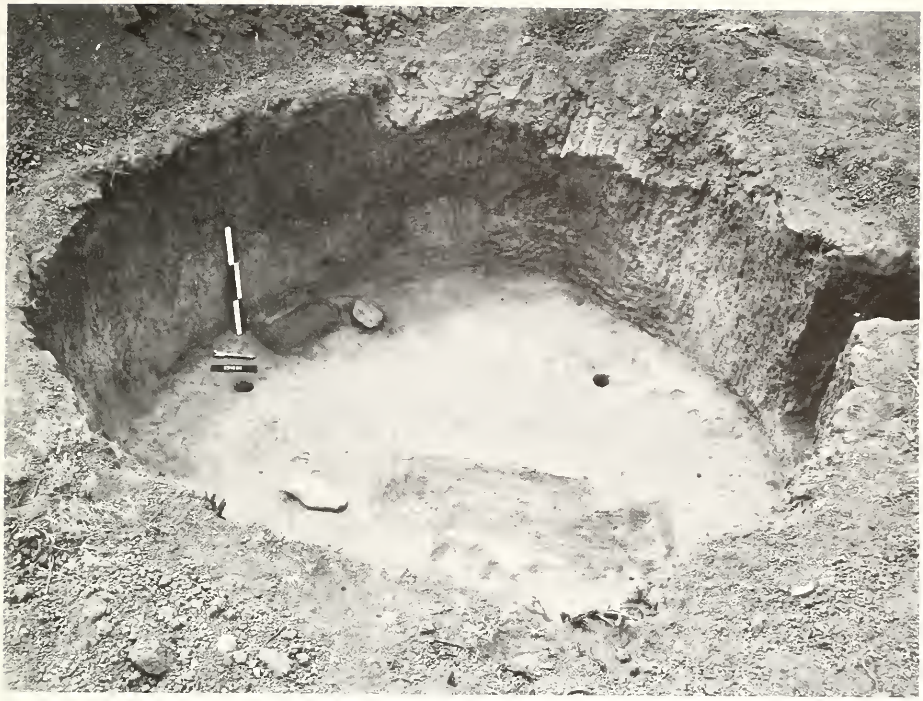

Fig. 20. View of Feature 3, LA 4245, looking west.

Near the southwest edge of the feature is a firepit containing an ash bed 2.1 feet thick. It is surrounded on three sides by cobbles of varying sizes, but there were no cobbles lining the bed of the firepit.

DISCUSSION OF THE ARCHITECTURE

The architecture of Site LA 4245 presents an interesting combination of traits, some of which may be assigned to Basket Maker III, others to Pueblo I stages. The precise breakdown of these traits into periods will be discussed in another paper, in this publication, in relation to the other sites described in this report.

One feature, which deserves particular mention here, is the ventilator of Feature 1. It is of a bifurcate type, with two house openings, whose passages merge to a single central shaft; they unite, and the shaft rises to the surface. Several pit houses with similar systems have recently been excavated in the region; one is included in this publication. Descriptions of the others, not yet published, are in preparation. It may be that this type of ventilator construction is diagnostic. To our knowledge, only one other such occurrence has been reported. Morris (1939, pp. 61-62) reports such a ventilator in a "proto-kiva" which he assigns to the Pueblo I period. In this instance, the structure had a single ventilator opening, plastered over with adobe. Subsequently, two smaller openings were dug, one on each side of the original. They converge towards the single shaft and proceed as one to the surface.

There is a possibility that Hall (1944, p.8) may have found a similar ventilator in the Gobernador, in a site belonging to the same period, but he is not clear on this point. In discussing his Site 1, House A,

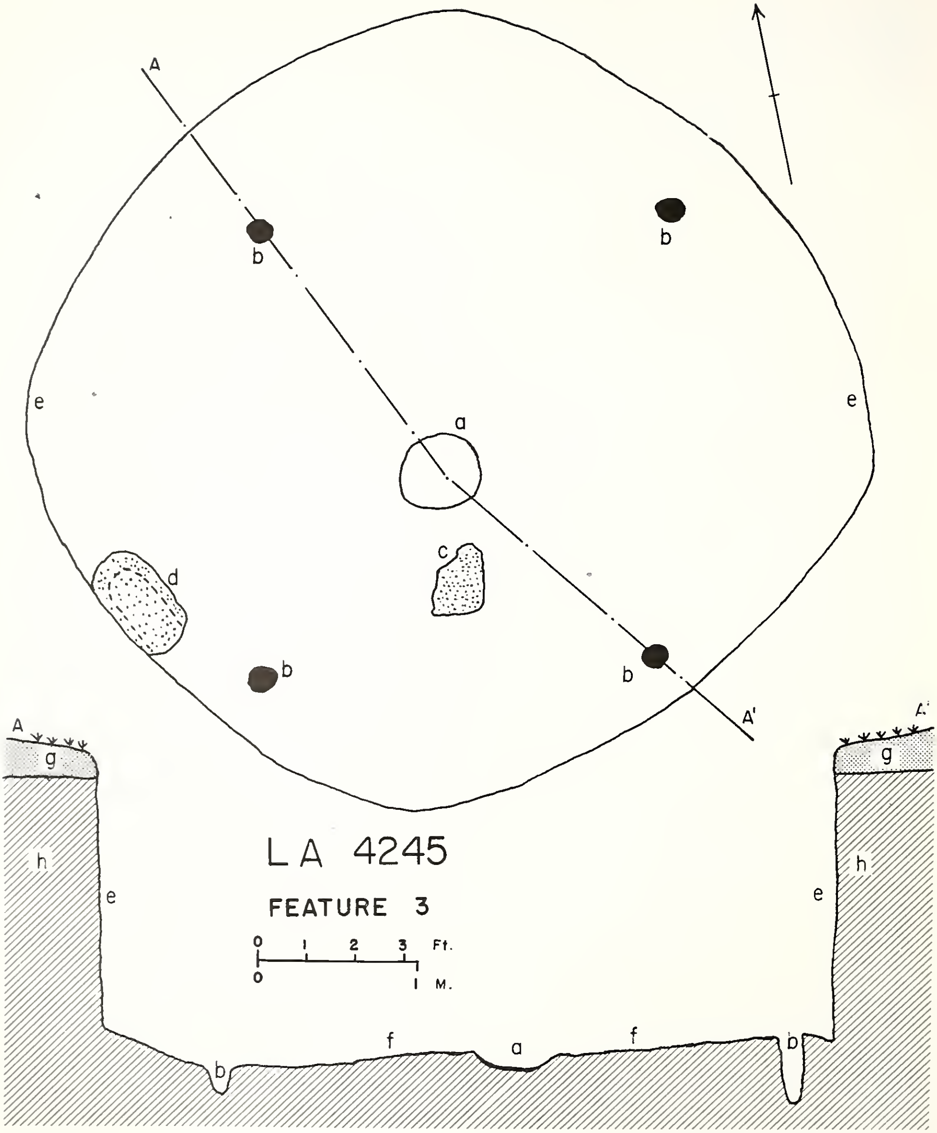

Fig. 21. Feature 3, LA 4245, plan and profile. a, fire pit; b, post holes; c, deflector; d, overturned metate; e, wall; f, floor; g, slope wash; h, sterile soil.

TABLE II

SIZE OF FEATURES, LA 4245

(Measurements in Feet)

PIT HOUSES

	Depth of Floor Below Surface	Maximum Diameter	Bench		Firepit		Firepit Collar
Feature			Width	Height	Diameter	Depth	Width
Feature 1	6.2	25.2 N-S 27.5 E-W	1.1-3.6	2.05	1.85	1.32	0.25
Feature 3	6.63	15.7 N-S 16.5 E-W	-----------		1.5	0.3	----

	Partition Wall		Partition Wall Holes	Postholes	
Feature	Width	Height	Diameter	Diameter	Depth
Feature 1	0.33-0.7	2.4	0.4-0.5	0.37-0.5 (5 examples)	1.1-1.3
Feature 3	-------------		--------	4.5 -5.8	0.3-1.4

SURFACE STRUCTURES

Feature	Length	Width	Firepit Depth
Feature 2	14.0	10.0	--
Feature 4		no significant measurements	
Feature 5	---	---	.45

he describes the system as follows: "Ventilator: east of fire pit; excavated in native soil to within 20 cm. of floor level, and then cut into room. Once had been (sic) two openings 25 cm. in diameter. One was later plugged, possibly correlated with change in fire pit."

Whether or not this is another example, it should be interesting to see the conclusions that might be forthcoming if this trait is examined from a diagnostic point of view.

It is interesting also to note that in houses with partition walls, manos and metates are found, in many instances, within that enclosure. Feature 1 presents an obvious exception. On the floor of this structure are three metates, all with manos in the working grooves; and all are north of the partition wall in the main section of the house (Fig. 19).

There is fairly substantial evidence in this feature that the bench was used as a work area. During excavation, a metate was exposed on the bench top (Fig. 19-q): although shattered, the pieces were still in their original positions. The portion of the bench directly beneath the metate was relatively unaffected by fire, whereas the surrounding areas were dark red to black.

An architectural comparison of Features 1 and 3 presents strong contrasts.

About the only traits in common between the two structures are their circular shapes, the depths, four post holes for roof supports, and fire pits. Feature 1 is much larger in size and exhibits a bench, partition wall, bifurcate ventilator, and plastered walls not found in Feature 3.

In general, a glance at the two structures leaves one with the impression of different peoples of a different age. Even if O'Bryan's criteria (1950, p. 104) for Basket Maker III pit houses are applied to Feature 3, the structure falls short of conformity. There is no partition wall, nor was any sign of floor demarcation found; and there are no storage bins or floor pockets.

Feature 1 has characteristics that combine late Basket Maker III and Pueblo I techniques, if O'Bryan's criteria can be applied in this area. From the pottery collections, both seem to have been occupied in the period from A.D. 750 to 900: Feature 1 apparently is the more recent. This places Feature 3 in the period from A.D. 750 to 850; the latter date being more likely. Following this, Feature 1 is placed within the A.D. 800 to 900 range, with the possibility that its occupation may have lasted through much of this time span.

ARTIFACTS

Artifacts of Stone

Site LA 4245 was relatively sterile in terms of pottery and other artifacts, compared with other sites dug during this project. A total of twenty-two stone, bone, and miscellaneous clay artifacts was found, of which all but five are ground stone tools.

GROUND STONE

Metates (8):

a) Trough, one closed end (3). Roughly rectangular in outline. Made of several types of sandstone. Sizes range from 21.5 to 24.5 inches in length; 5.8 to 7.5 inches in thickness; and 10.0 to 18.0 inches in width. All show considerable wear. Two from the floor, Feature 1, and the other from the floor, Feature 3 (Fig. 22-a, c).

b) Trough, both ends open (1). Rectangular outline and cross-section. Made of a dark heavy sandstone. Length, 22 inches; width, 14.5 inches; thickness, 2.1 inches. Working surface shows only light wear. Found in contact with the floor in Feature 1 (Fig. 12-b).

c) Fragments of at least four metates; two made of sandstone, one of dolomite, and one of basalt. One is badly broken; it was found on the fallen roof of Feature 1. The others were in the fill of Features 1 and 3.

All the whole metates (3) from Feature 1, had manos in the working surface grooves when excavated.

Manos (6):

a) Thin rectangular stone, loaf-shaped in cross-section (2). Made of sandstone and basalt. Lengths, 5.6 inches and 8.1 inches; width, 4.4 and 4.7 inches; thickness, 1.2 and 1.25 inches. They show a medium degree of wear. One was found in a metate in Feature 1, the other was a surface find (Fig. 22-i).

b) Thin rectangular stone, wedge-shaped in cross section (3). Two were made of basalt, and the third of white sandstone. The lengths varied from 7.1 to 8.9 inches; the widths from 4.3 to 4.6 inches. All showed heavy wear. One was found in a metate in Feature 1. The other two were found in the ventilator of the same feature (Fig. 22-h).

c) Thin rectangular stone, with single grinding surface and two opposed concave edges (1). Made of basalt. Dimensions: length, 7.3 inches; width, 4.7 inches; thickness, 1.75 inches. Showed only medium wear. The concave edges were along the long axis of the stone, presumably to give a better gripping surface. Found in a metate in Feature 1 (Fig. 22-g).

Polishing and Hammerstones (3):

a) Oval stone, multiple use (2). Made of basalt and andesite. Diameters, 3.0 and 4.5 inches; thickness, 1.0 and 1.35 inches. Both show a flat surface used for grinding and polishing, and edges which

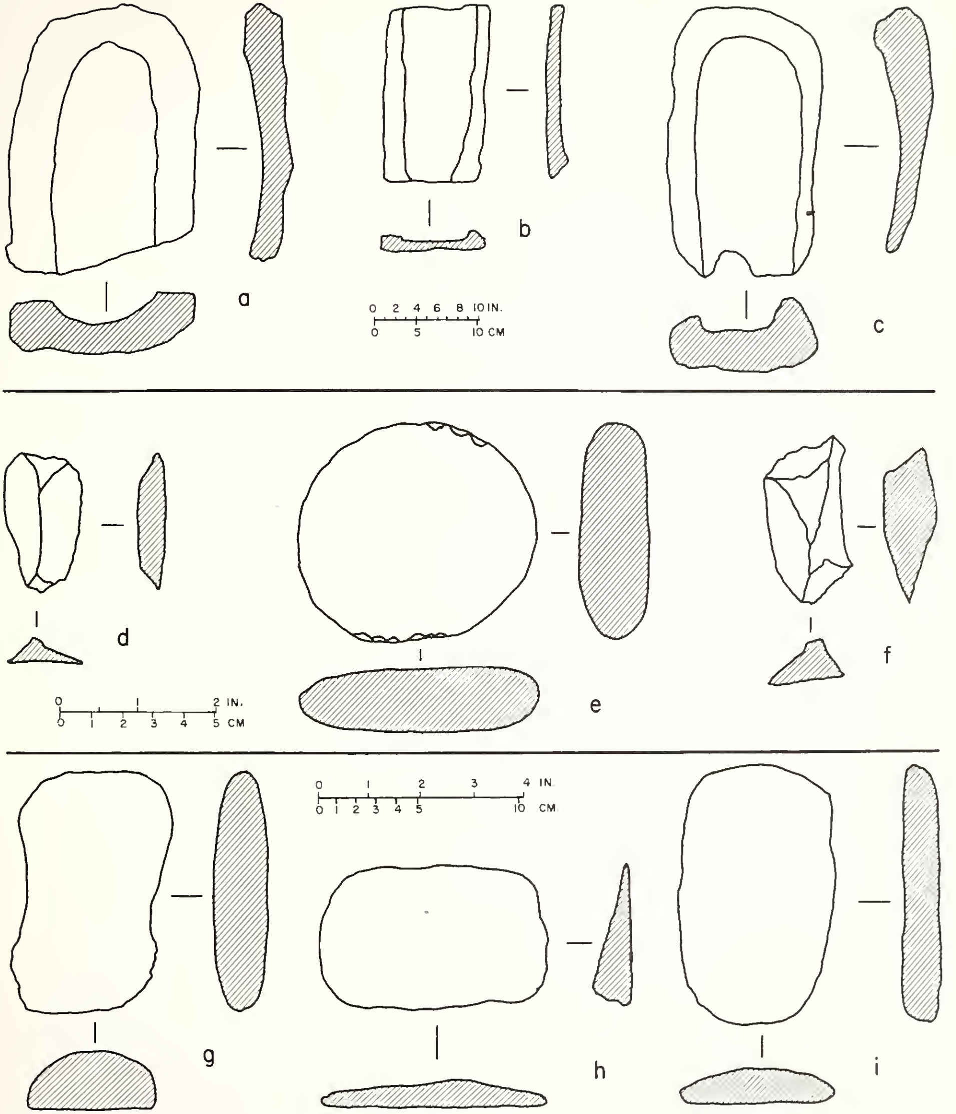

Fig. 22. Stone artifacts from LA 4245. a, c, one end closed trough metates; b, trough metate with both ends open; d, f, side scrapers; e, polishing and hammerstone; g, mano with concave sides; h, mano with wedge-shaped cross-section; i, mano with loaf-shaped cross-section.

are battered as though used as a hammerstone. Both were found in the fill; one from Feature 1, and the other from Feature 3 (Fig. 22-e).

b) Fragment of a polishing stone, with one wear facet, "D" shaped outline, and loaf-shaped cross-section. Measurements: length, 5.2 inches; width, 2.85 inches; and thickness, 2.5 inches. Showed a medium amount of wear. Made of a poor grade of quartzite. Found in the fill of Feature 1.

CHIPPED STONE

Scrapers (4):

a) Side scrapers (2). One made of dolomite, and the other of quartz. Both are 1.9 inches long, 1.0 inches wide, and 0.5 inches thick, and are poorly flaked. One is from Feature 1 and one from Feature 3 (Fig. 22-d, f).

b) Fragments (2). End scrapers; one made of quartzite and the other of chert. Incomplete. Light secondary retouch on both fragments. One is a surface find; the other from the fill of Feature 1.

BONE ARTIFACT

Awl (1): Made from an unsplit mammal bone; but lacking articular end. Roughly circular in cross-section. Length, 4.5 inches; about 0.5 inches in diameter. A shallow notch is cut into the handle end of the awl about 1.0 inch from the base. An incised line runs over one face from the notch to the beginning of the working surface. It shows a fair degree of polish. Found in the fill of Feature 1 (Fig. 23-g).

CLAY OBJECTS

Cone of Clay (1): Grit tempered and fired; Rosa Brown. Incomplete; remaining section 4.0 inches long; diameter, 0.8 inches. Some indication that the original object may have been hollow. May have been a ladle handle. Found in fill less than 3.0 inches above the floor of Feature 3 (Fig. 23-c).

Hollow Clay Object (1): Grit tempered and fired; Rosa Brown. Roughly a pyramid in shape, with a small pinched lug on the peak of the pyramid. Incomplete; overall length, 2.3 inches; width, 1.6 inches. The hollow interior is heavily carbonized. Possibly the tail end of a duck effigy vessel (Fig. 23-b).

Ceramics

Figure 25 illustrates the sherd occurrence, on the surface and from the excavations, of Site LA 4245. Rosa Gray is obviously the predominant type in all situations. This ware is very similar to Lino Gray, but has finer temper and smoother surface, with little temper-surface protrusion (Hall, 1944, p.36).

In the collection from the site, Rosa Gray ranges in color from a dark gray to a red brown, with light gray the predominant color. Temper varies from district to district depending upon the availability of suitable material, but it may generally be classed as fine heterogeneous sand. Only one sample of a jar neck was recovered. It is elongate, and in the range of jar forms described by Hall (1944, Fig. 23). Hall places Rosa Gray ware between A.D. 700 and 900 (1944, p. 62).

Samples of Rosa Brown have a fine paste and light reflecting surface particles. The temper is medium coarse: time range is around A.D. 700 to 800 (?).

Two types of Rosa Black-on-White are represented: glaze and carbon paint. There are only two pieces with glaze paint. The three carbon painted sherds are characterized by fine temper, with larger quartz particles in the mixture. Rims represented in the collection are thinned and rounded. Dates are in the same range as Rosa Gray.

Arboles Gray, a provisional type, is tentatively dated between A.D. 850 and 1050 (?). The main difference between Arboles Gray and Rosa Gray is the inclusion of andesite in the temper of the Arboles Gray.

The occurrence of La Plata Black-on-Red and Bluff Black-on-Red represents trading in the site area. Both are believed to have originated from the northern drainages of the San Juan River, and the Animas River westward. They are placed in the following time periods: La Plata Black-on-Red, A.D.800 to 1000; Bluff Black-on-Red, A.D. 800 to 900 (Able, 1955).

As for the San Juan Red Wares, they are all tempered with quartz sand and crushed rock of medium to fine grade, with surface colors ranging from pink to orange (Able, 1955).

The Chapin Gray sherd is of the Twin Trees variety, light gray with fine crushed-rock temper and a smoothed surface. This variety is dated between A.D. 450 and 850 (Able, 1955). No attempt was made to determine the actual nature of the tempers of these wares, except by megascopic examination.

In Figure 24, two sherds are shown, from the site collection, that are listed as unidentified. Both appear to have been similarly gray slipped, but sherd "e" (Fig. 24-3) shows micaceous flecks on its exterior. They have the same paste, but show color differences ("c"-black, "e" gray) because of different firing. The temper of these samples is characterized by coarse crushed and rolled quartzitic sandstone and andesite.

Because of a lack of tree ring dates for this district, pottery becomes the major criterion for dating the site. Figure 26 shows the site collection in terms of type duration. It can be seen that the entire ceramic collection has a time range from A.D. 450 to 1050, with major clustering between A.D. 800 and 900.

It is interesting to note that there are few trade sherds in the collection. Those present are all from northwestern areas,

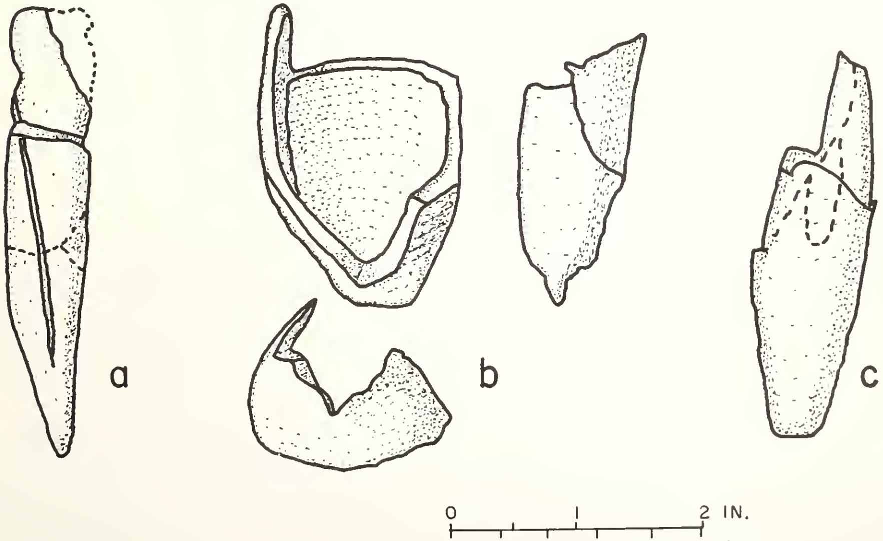

Fig. 23. Bone and clay artifacts from LA 4245. a, bone awl; b, Rosa Brown pottery, possible effigy; c, Rosa Brown pottery, ladle handle (?).

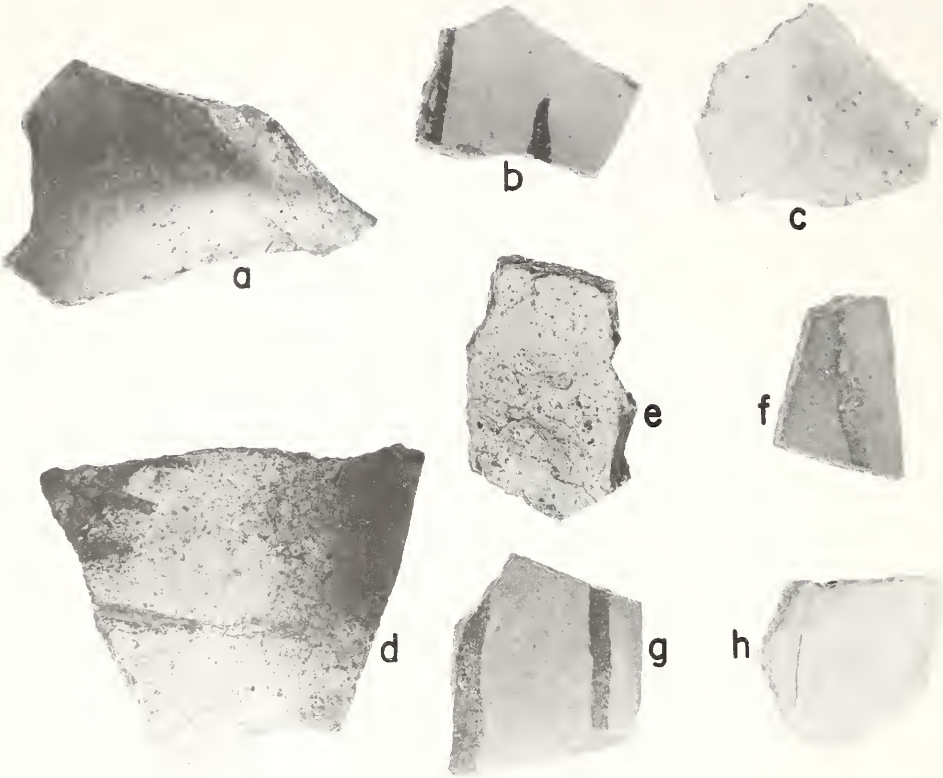

Fig. 24. Sample of pottery from LA 4245. a, Rosa Gray; b,f,g, La Plata Black-on-Red; c,e, unidentified; d, Rosa Black-on-White; h, Chapin Gray.

indicating some Mesa Verde influence. The percentage of trade wares compares with that acquired during the Navajo Project surveys (1958, p. 12).

SUMMARY

Site LA 4245 is an archaeological excavation initiated under a simulated "crash program" time allowance. In three weeks the site was surveyed and excavated to the extent this report outlines. Two subsurface structures were exposed, in addition to three areas assumed, at the time of survey, to be surface structures. As our discussion of these three "surface structures" indicates, only one, Feature 5, shows definite cultural use in a definable area. Feature 2, because of strong surface indications, also presents an argument in favor of its classification as some form of humanly constructed surface unit. The deposition of Feature 4 remains in doubt.

Due to the time limit a complete excavation of the total site was not possible. Therefore, many questions concerning these "surface structures" remain unanswered. Nevertheless, the authors feel they succeeded in their major purpose: gathering the most information in the allowed time.

LA 4245		SAN JUAN GRAY WARES					SAN JUAN BROWN	SAN JUAN RED WARES		MESA VERDE GRAY WARES		
		ROSA GRAY	ROSA NECKBANDED	ROSA B/W		ARBOLES GRAY	ROSA BROWN	LA PLATA B/R	BLUFF B/R	CHAPIN GRAY	UNKNOWN	GRAND TOTAL
				Carbon	Glaze							
SURFACE		83			3			3			2	91
FEATURE ONE	Fill	31	1	2	2	2	6		4	1		
	Floor											
	Total	31	1	2	2	2	6		4	1		49
FEATURE THREE	Fill	11		1			2					
	Floor	2										
	Total	13		1			2					16
TOTAL NO.		127	1	3	5	2	8	3	4	1	2	156
TOTAL %		81.50	0.64	1.92	2.20	1.25	5.13	1.92	2.55	064	1.25	100

Fig. 25. Provenience for pottery types from LA 4245.

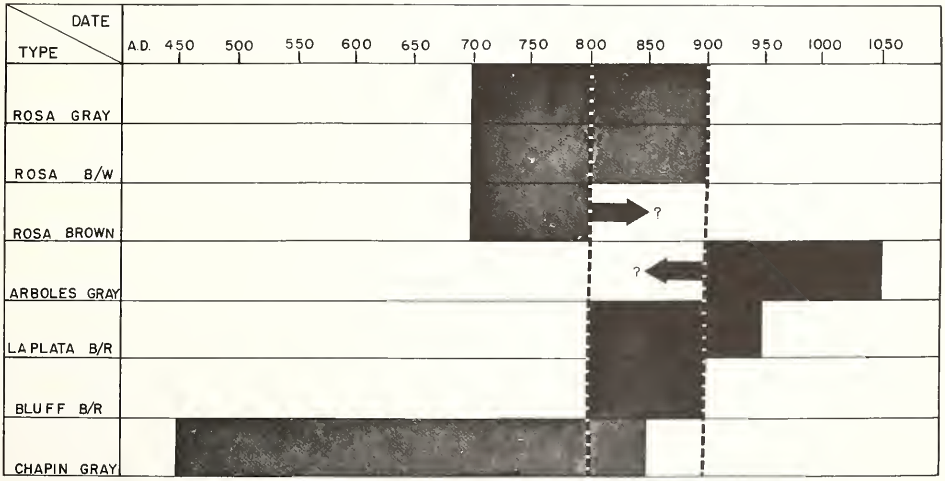

Fig. 26. Ceramic time span for pottery collected at LA 4245. Date of site is estimated. Pottery dates from Dittert (1961).

From our studies of the material and the features exposed, we feel that Site LA 4245 belongs in the latter part of the Rosa Phase. Our arguments for this are stated in the Ceramic and Architectural section of this report. In summary, it may be said that the Rosa Phase falls between A.D. 700 and 900. It is characterized by large, deep pit houses with attached surface structures. The latter become architecturally more pronounced in the later parts of the phase. Towards the close of this period, the region is marked by a gradual northward movement of peoples out of the area until, by A.D. 1050, the locale of our site was devoid of settled occupants.

THE EVCAVATION OF LA4247

by DONALD McVICKER
and WALTER LENINGTON

SITE DESCRIPTION

The area designated as Site LA 4247, extends for several hundred feet along the top of the second Pleistocene (?) bench which rises from the east bank of the San Juan River. This bench, a little over 6,000 feet above sea level, is between 100 and 125 feet above the river. It is approximately 900 feet wide in the project area. Uells Canyon cuts through the bench a quarter of a mile to the south and east of the site, forming a promontory bounded by the San Juan River, Uells Canyon, and the sharp rise toward the third bench. The promontory is located in the NE 1/4, SW 1/4, Sec. 27, T.32 N, R.6 W., NMPM, Rio Arriba County, New Mexico. It is known locally as Julio Mesa.

At the site, and adjacent to it, the mesa is covered with sagebrush. A juniper-pinyon growth is encroaching upon the bench but is heaviest higher on the slopes. Deciduous trees are confined to the river valley below the site.

Geologically, the area is a flat sedimentary plain, cut by deep canyons. The canyon walls are now largely eroded down to rather unspectacular hills, and the slopes are cluttered with large water-and-wind-worn blocks of sandstone. Elsewhere, the surface of this area seems to be covered with sterile gray or reddish-brown clay flecked with caliche. For further discussion of the ecology in the reservoir area, see Dittert, Hester, and Eddy (1961).

Although cultural materials are scattered over most of the surveyed surface, the following areas of marked concentration were noted: two shallow depressions, later termed Feature 1 and Feature 2, ringed with sagebrush, lying just east of a forty-foot square area thickly covered with nearly 200 stones (Feature 3). Many of these stones appeared to have been worked. Approximately 150 feet northeast of the north depression was the densest concentration of trash. Only toward the back of the bench,

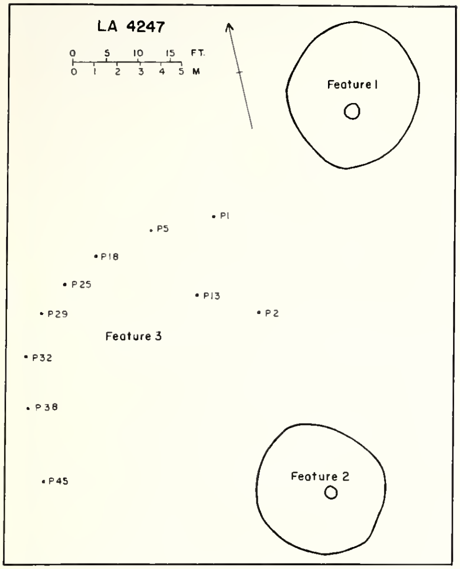

Fig. 27. Plan of LA 4247

to the east, did the surface scattering of sherds and chips become insignificant. To the south of the site, surface trash became only slightly less concentrated, until it again increased in the area of Site LA 4245 about 200 feet away. Considering the number of depressions noted, but not tested, between the two sites and the continuity of surface material with closely similar ceramic collections, it is probable that the entire promontory was once occupied by a single pit house village.

Pot hunters had probed the stone-scattered surface west of the pit house depressions. Two irregular excavations, about five to six feet in diameter, and not more than 0.65 feet in depth, had been dug thirty feet northwest of the south pit house depression. Though large stones were tossed about the edges of these pits, no walls, floors, or alignments could be observed when the pits were cleared.

The features of LA 4247, though located toward the front of the second bench, are still over 200 feet from the edge of the bench. A test pit, Feature 4, toward the edge of the trash, 135 feet from the bench edge, revealed no depth of deposit. Surface materials appeared to have washed down from further back on the bench. Similarly, a second test pit, Feature 5, to the north in the area of greatest trash accumulation, revealed no depth of deposit. No surface irregularities, or areas of additional trash concentration, were identified as the source of either Feature 4 or 5. Though middens may exist, or have existed, all indications now point to either a short occupation, or a wholesale broadcast of discarded materials.

EXCAVATION METHODS AND TECHNIQUES

Virtually the same technique was used in the excavation of both pit houses. Initially, a test pit was sunk into the middle of the surface depressions. These pits were set arbitrarily at five feet square, and dug down until floor was reached. Subsequently, a test trench, approximately three feet in width, was run north from the pit. The face of this trench was carried back at one foot intervals, and carried down to within a few inches of the floor. When wall was located, the test trench was abandoned.

In Feature 1, the wall was covered irregularly with green sand. A trench was initiated to follow it around toward the west. In Feature 2, the test trench was widened to the full five-foot width of the test pit, in order to ascertain the curvature and nature of the very indistinct wall of that feature. Once this was accomplished, a trench was dug in a westerly direction following this wall. The technique of trenching along the walls had two purposes. The first was to determine the outline of the structure and the second was to clear the walls enough to protect them from accidental removal by the back-hoe. Since little trash was found in the fill, the tractor was used to remove the bulk of the fill from both pit houses. Though continuous efforts were made to define walls and floors fast enough to keep up with the back-hoe, this was not always possible. As a result, the back-hoe occasionally cut into some walls, and left its marks on various floor areas.

Small tools were used once the bulk of the fill was removed from the pit houses. During the entire excavation, only cursory attention could be paid to the artifacts and cultural debris present in the fill. No screening was done, and only the floor and floor features were excavated with a trowel.

The only control consistently maintained over the artifacts recovered was to note whether they came from the surface, the fill, or the floor. Actual close plotting of the location of artifacts was impossible in the fill, and not always possible on the floor. Immediately following exposure of the floor in the five foot square test pits in the pit house depressions, pollen samples were taken. A trowel was used to remove clumps of soil at six inch intervals, starting from the floor. These samples were bagged in separate plastic sacks, and sealed with rubber bands. No information on the results of sample analysis was available at the time of publication.

The excavation of the surface structure, Feature 3, was early relegated to the status of a spare-time project. The initial clearing of the area, removal of loose top soil and the clearing of the vandal pits revealed nothing of note. A trench 3.5 feet by 10.0 feet was dug into the north edge of the north vandal pit in search of a definable floor or living surface. None was found. After this initial attempt, primary interest was focused on the pit houses. Excavation of Feature 3 was carried on only irregularly. The first step taken was to remove approximately the first two inches of soil from the whole area. Subsequent to this, all the stones, both surface and exposed, were mapped, and all movable ones removed.

The second step of the program consisted of removing the soil at 0.25 foot levels, sweeping, and poking around in soft spots and color changes with a trowel. This was continued until the first post holes began to appear. At this point, a "crash program" of salvage excavation went into effect. Most of the excavation was done with small picks and shovels. The technique of this third step was simply to note the approximate depth at which the post holes were coming to light, estimate where the next post hole would occur, and proceed to remove the intervening overburden. No attempt was made to maintain the traditional 10.0 feet square section control or the 0.25 to 0.5 foot level control. The aim was simply to find the greatest number of post holes in the shortest possible time, in order to outline the structure.

At one point, in the closing hours of the excavation, the front-end loader of the tractor was used to clear sagebrush and top soil from the extreme southern end of Feature 3. Once a possible post was exposed with the shovel, it was further exposed and cleared with a trowel and a broom. For mapping purposes, numbers were assigned to the posts found, and stakes driven next to them, or even into them. None of the posts were removed; there simply was not time.

EXCAVATED FEATURES

Features 1 and 2: Pit Houses

The two depressions noted during the initial survey of Site 4247 were approximately twenty feet apart, on a north-south line. Before excavation, the north depression, Feature 1, averaged twenty-four feet in diameter, while the south depression, Feature 2, averaged thirty-six. Upon excavation, both proved nearly identical in size and shape.

The initial test pits in Features 1 and 2 revealed an undifferentiated fill of hard, compact, and sandy clay. Few sherds and artifacts were recovered until floor was reached.

The exception in Feature 1 was a concentration of badly decayed human bones 3.3 feet below the surface. It is probable

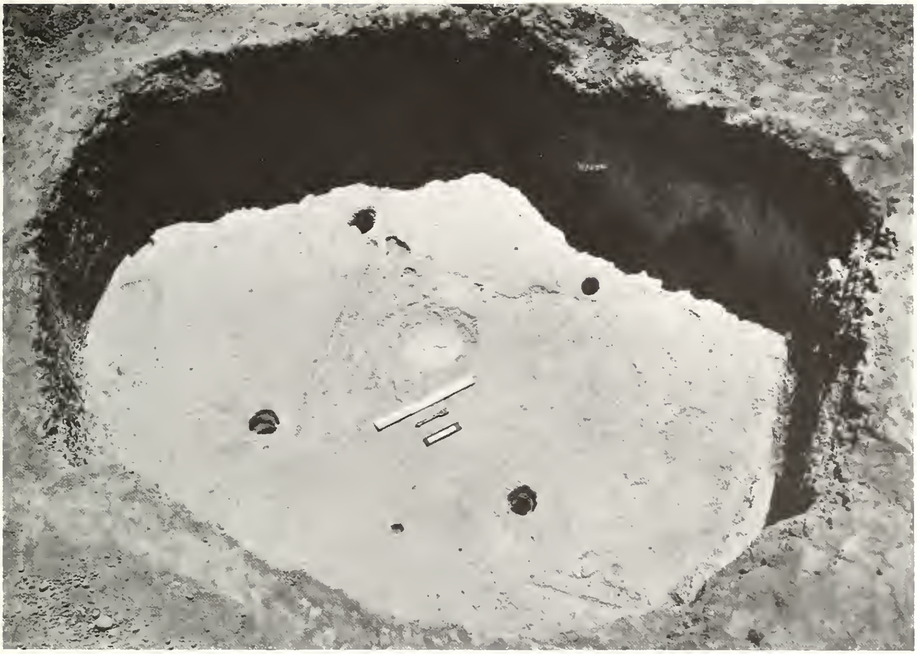

Fig. 28. View of Feature 1, LA 4247, looking southeast.

that the bones represent the remains of a burial which had been placed in the ground immediately outside the wall. When the upper wall of the pit house slumped, the bones were carried into the fill. A similar situation was encountered in the fill of Feature 2, where an articulated dog skeleton was found mingled with rocks.

The six inches of fill, covering the floor, consisted of burned adobe, charcoal, ash, and wood fragments--apparently the remains of fallen roofing. The fill near the floor and adjacent to the walls, particularly in the north half of Feature 1, was markedly moist, soft, and dark brown. The sterile earth in both houses, behind the walls and under the floor, was hard, medium brown, and heavily impregnated with caliche. Only a few specks of charcoal were present in this sterile earth.

Both Feature 1 and Feature 2 are generally round in shape. However, the southeast wall of Feature 1 is flattened, giving it a D-shape appearance. The wall of this feature bulges out slightly in the northeast and southwest quarters, and curves into the southeast at the beginning of a remnant partition wall (Fig.30). The walls, with the exception of the north half of Feature 1, are unplastered, and can be defined only by a slight soil change between fill and sterile. No height of wall could be estimated, though the change between fill and sterile is more marked from the floor to two or three feet above. The north half of the wall of Feature 1 is irregularly covered with green sand, in some areas to a height of two feet. This coating did not appear to be a consistent plaster, but rather, decayed sandstone mixed with mud. Often this sand had filtered into the fill and had spilled out upon the floor. Neither the walls of Feature 1, nor of Feature 2, appear to have been burnt.

The floors in both pit houses are hard packed clay, and assume a blue-gray color from charcoal accumulation. The floors lie directly over sterile, and though probably once plastered, are not of measurable

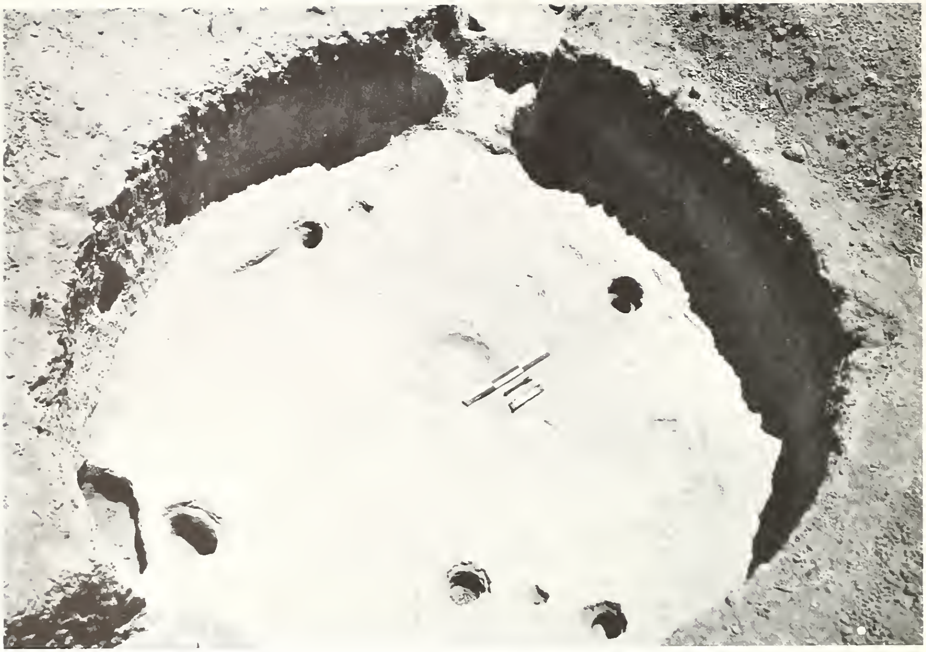

Fig. 29. View of Feature 2, LA 4247, looking southeast.

thickness. The floors are uneven, and rise slightly to the east, to form an irregular platform, or dais, curving between the ventilator shaft and the fire pit. In Feature 1, a remnant wall, no more than a plastered-over ridge, bounds the lip of this platform. To the south and west, the floor of Feature 1 rises sharply to meet the wall. In this same area, the floor becomes broken, and offers evidence of resurfacing.

An area of floor several feet long and six inches wide was chipped off with a knife to reveal a fugitive undersurface of unburned gray-green floor. Further evidence of remodeling was uncovered in two small floor basins. The wall continues 0.17 feet below the burned floor level in these basins, and appears to pass out of the south basin behind the partition wall.

The fire pits in both pit houses are circular and are plastered. Both are shallow, filled with alternating layers of sand and charcoal-filled ash. A collar of burned red sterile encircles the pits between plaster and floor.

The ventilator shafts, cut into the southeast wall of both houses, are poorly marked. Both are bifurcate, with a single opening into the room and double surface vents. In Feature 1, the north vent was choked with three unworked blocks of sandstone. In Feature 2, several stones also appeared above the postulated, but unexcavated, south vent. Though no evidence for deflectors was uncovered, the position of the remnant wall in Feature 1 suggests it may have once functioned in this capacity.

The entrance to the ventilator shaft in Feature 1 was blocked, to a height of 0.5 to 0.65 feet, by hard reddish-brown adobe flecked with charcoal and occasional sherds. When this material was removed, a hard surface continued underneath, sloping slightly up from floor level. The shaft rose sharply and bifurcated at a point 3 feet from the wall.

It was impossible to determine definitely the course of the ventilator shaft in Feature 2. No definite bench could be followed. However, the horizontal shaft seemed to be shorter.

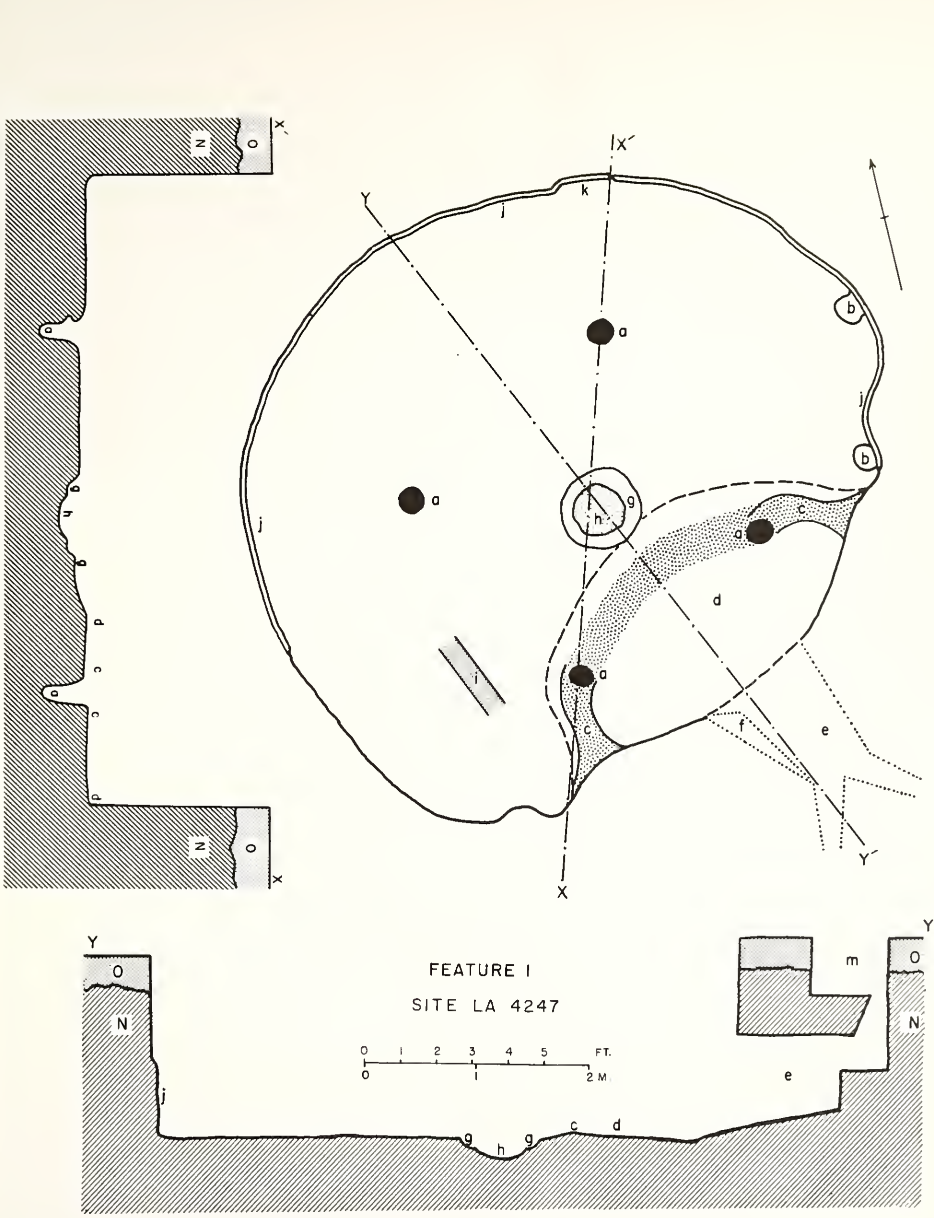

Fig. 30. Feature 1, LA 4247, plan and profile. a, post holes; a', post hole ledge, b, floor basins; c, remnant partition wall; d, platform; e, ventilator; f, ventilator bench; g, firepit, unplastered; h, firepit, plastered; i, exposed resurfaced floor; j, green sand wall covering; k, north test trench; m, ventilator test trench; n, sterile; o, surface wash.

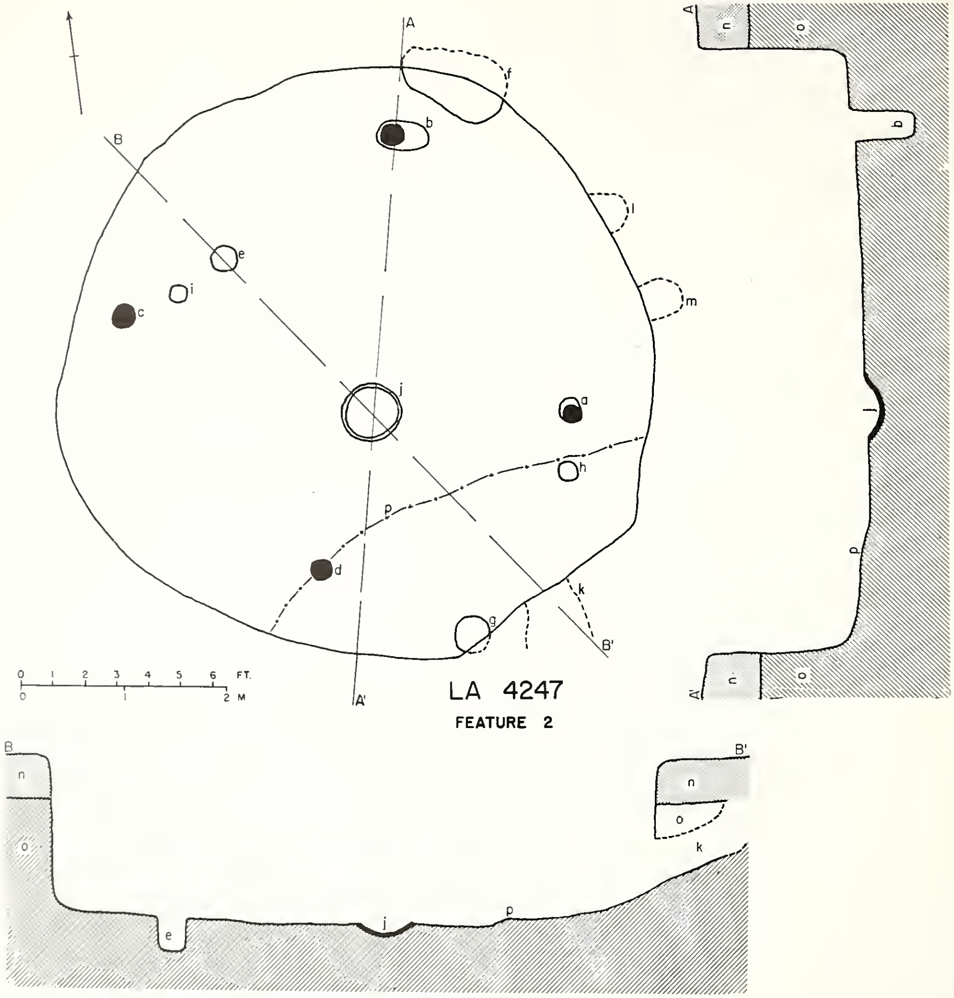

Fig. 31. Feature 2, LA 4247, plan and profile. a, southeast post hole; b, northeast post hole; c, west post hole; d, southwest post hole; e, sipapu; f, storage bin (semi-subfloor); g, southeast storage cist; h, i, small floor basins; j, firepit; k, ventilator shaft; l, north wall niche; m, east wall niche; n, slope wash; o, sterile; p, edge of southeast platform.

Four post holes were uncovered in each pit house. Only in the southeast post hole of Feature 1 did a sizeable post remain. Slightly burned at the top, and badly decayed at the base, it protruded two feet above the floor. On clearing, this post hole appeared to be lined with green sand and filled with fine gray sand and ash. The gray sand was present as a lining in all the post holes of Feature 1. Behind this packing in the northeast post hole a coating of the same green sand mixed with mud that covers half the wall, appeared. With the exception of the southeast post hole, all others had small ledges. In the northeast post hole, a river cobble sat upon this ledge. The floor rises around the edge of all post holes, and forms a lip.

In Feature 1, the resetting of post holes offered further evidence of remodeling. Replastered depressions appeared from one to two feet away from the open post holes. Also, though the fire pit centers roughly between the present post holes, the entire alignment is off-center relative to the walls (Fig. 30).

In Feature 2, gray sand was also present in the fill of the post holes. In the southeast one, the post mold was admirably preserved in the fill originally tamped around the post. The northwest post hole contained an unworked stone neatly fitting the bottom. Either the original builders ran into this stone and stopped, or used it as a foot for the inset post.

A large plastered sipapu, located slightly to the southwest of the fire pit ventilator shaft orientation, was uncovered in Feature 2. No offerings were found, and the fill did not differ from that of the post holes. No sipapu could be found in Feature 1, though all suspicious areas were investigated.

A sizeable irregular pit had been dug into the floor, and under the northeast wall of Feature 2. Apparently used for storage, it yielded ash, several potsherds, a partially restorable bowl, and numerous pieces of worked bone. The rim of the pit appeared to be made of mud or adobe, clean and hard as the floor. A small basin or pit is slanted under the south wall of the same feature, just west of the ventilator shaft. A possible fifth post hole, near the southeast post hole, contained nothing but soft light soil.

Two shallow basins extend out from the wall in the northeast quarter of Feature 1. Neither basin contained any artifacts, and both were unplasterd. There was no bench or ladder post holes in either pit house.

No stone artifacts were found resting directly upon the floor in either pit house. However, a cache of worked flakes was discovered immediately above the floor in Feature 1 (Fig. 39). A large metate rested in the fill above the floor of Feature 2. Possibly it fell from the roof, or later was tossed or slid into the fill. The five foot square test pit yielded an antler tool (Fig. 40-a), presumably a flesher, from the floor of Feature 1 near the south wall. Several small bone artifacts were recovered from the floor of Feature 2, prior to the back-hoe removing the fill. Three bone awls, an elk antler tool (Fig. 40-b) similar to the flesher from Feature 1, and a bone tinkler, were found near the west wall. A second bone tinkler, similar to the first, was taken from near the north wall in the vicinity of the original test pit.

Discussion

The D-shape of Feature 1, while not unknown in other areas, is unreported for the upper San Juan or Gobernador. Adjacent regions, on Mesa Verde (O'Bryan, 1950; Lancaster and Watson, 1954), and along the La Plata (Morris, 1939), have not yielded houses of similar shape. The small size of both pit houses suggests that they were single family dwellings. The sipapu in Feature 2 indicates the continued use of part of the house for ceremonial purposes. The lack of evidence for permanent living quarters on the surface, and the presence of floor pits and wall niches in the pit houses, indicate that pit houses were the primary dwellings.

The resurfacing of floors and other minor structural alterations is evident in Feature 1. Though length of occupation is always dangerous to infer, the removal of the partition wall and resetting of post holes, plus the spread in time of pottery types recovered (Fig. 34), suggest that the houses were lived in for several generations, probably between A.D. 800 and 900.

No evidence for a community pattern of settlement was found. Village clusters exist on the west side of the river at LA 4195, but the inhabitants of the second bench appear to have lived much like the historic homesteaders - in self-sufficient units strung along the river, farming the Recent terrace, and perhaps occasionally entering into the more organized life of the communities across the river.

The general lack of sherds and artifacts from both houses, from either fill or floor, suggests that the houses were deserted deliberately, and that all objects of value were removed. The unburned state of the walls, despite the charcoal concentration resting upon the floor, points to a slow disintegration, and only partial destruction by fire. This suggestion is supported by the decayed post, charred only at the top, remaining in Feature 1. Since no other posts were found, it is possible that they were removed for re-use, and that the roof collapsed and eventually burned on the floor.

The number of worked rocks recovered from the fill of Feature 2, and the large metate found above floor level, may seem to pose a problem. However, considering the heavy concentration of worked fragments found on the surface, it is quite possible that those found in the fill were washed or thrown in, or slid in during the gradual filling of the pit house.

No reasons for desertion can be offered, aside from unreconstructible personal ones. Only the general northward movement of population, as the San Juan progressively entrenched, is suggestive (Dittert, Hester, and Eddy, 1961, pp. 224-229; 233-234).

Feature 3: A Surface Structure

Feature 3 consisted of a concentration of loose stones scattered about on the rise west of Feature 1 and 2, and concentrated around two pits dug by vandals. When the clearing of the vandal pits revealed nothing, a program of stripping the surface, in

TABLE III

SIZE OF FEATURES, LA 4247

(Measurements in Feet)

PIT HOUSES

Feature	Depth of Floor Below Surface	Maximum Diameter	Firepit		Firepit Collar		Sipapu	
			Diameter	Depth	Width	Height	Diameter	Depth
Feature 1	5.0	18.0	2.3	0.5	0.6	-0.15	---	---
Feature 2	5.8	18.0	2.0	0.5	0.25	0.15	1.0	1.2

Feature	Postholes		Floor Pit		Floor Basins	
	Diameter	Depth	Diameter	Depth	Diameter	Depth
Feature 1	0.7-1.0	1.0-1.5	----	---	0.85	0.15
Feature 2	0.7-1.0	1.0-1.5	3.2 x 2.0	1.5	1.2	1.25

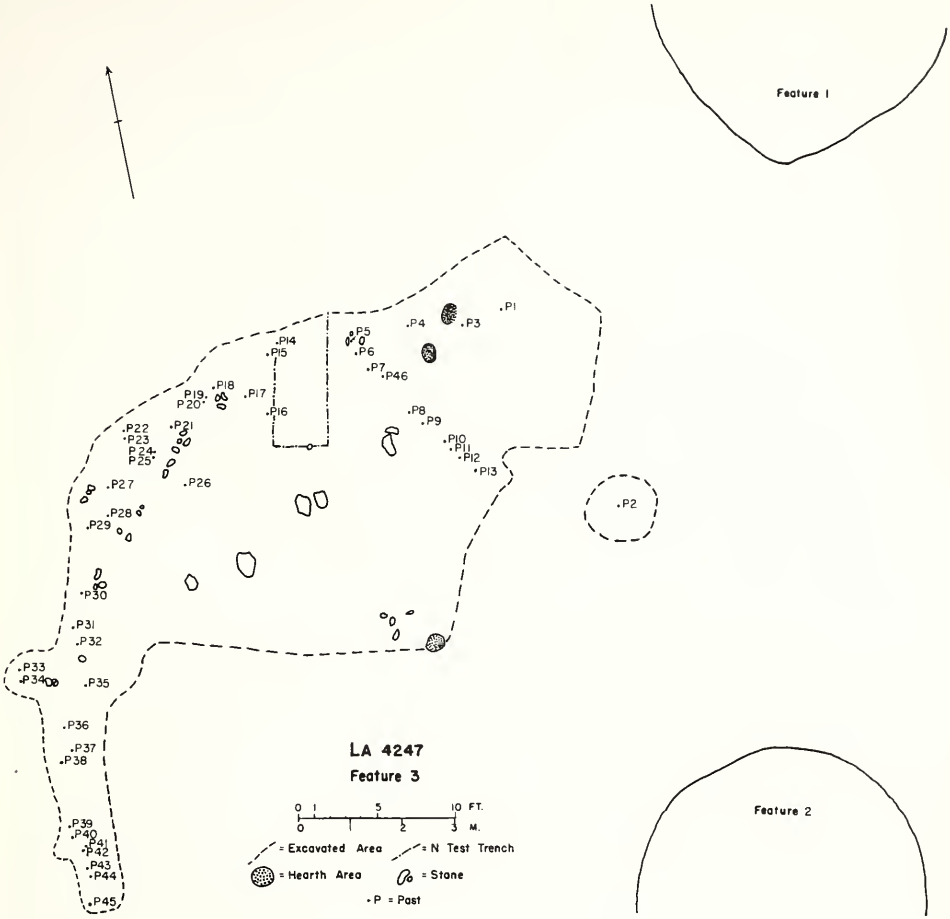

Fig. 32. Plan of Feature 3, LA 4247.

0.25 feet levels, was begun. Unfortunately, the first post hole was discovered only two days before the termination of the dig.

Once the initial contact was made, excavation proceeded quite rapidly and, ultimately, resulted in the exposure of forty-six post holes (Fig. 32). The final pattern of posts formed a rough arc, curving from north-northwest to west, around the south pit house (Fig. 2). Near the easternmost post (Post 1), a line of posts, apparently a partition or dividing wall, strikes out toward the north wall of Figure 2. This line contains at least thirteen posts. Continuing around the arc, to the west, two posts (Post 16, 17) were found to be more or less parallel to this first partition. However, despite painstaking excavation of the immediate area, no more posts could be added to this alignment. It is likely that the test trench (Fig. 32), in the north edge of the north vandal pit, plus earlier pot hunting activity, wiped out whatever line may have existed.

For Posts 18-35 there is a clearly definable pattern of stones in conjunction with the post hole arc. These stones, generally flat and rectangular, are grouped, usually by twos or threes, along the inside of the post arc. No stones were noted in conjunction with the post arc past Post 35.

With Post 38, the arc becomes intermittent. Posts 39 - 45 are quite densely grouped, giving the impression that they begin a new structure. Time was too short to permit this possibility to be properly investigated. The positions of Posts 22 and 23, and Posts 33 and 34, should be noted, as they appear aberrant to the general arc pattern. Also to be noted is the group of three stones located between Posts 27 and 29, and lying outside the arc.

Three areas of particularly intense burning were noted in conjunction with, and at approximately the same level as, the post hole patterns. These areas (Fig. 32) did not appear to be constructed fire basins, such as were found in the pit houses. Rather, they looked more like surface hearths, where occasional fires had been built. They consisted of concentrations of ash and burned soil. A pronounced concentration of charcoal and burned soil was also noted, extending north from the area of Posts 1 - 3.

The culture-bearing strata, as far as was excavated, contained charcoal flakes of various sizes, and random pottery sherds, but by and large, the area was relatively poor in cultural materials. Occasionally bone fragments, worked and unworked, were recovered. One excellent stone maul was also recovered (Fig. 36). In some places, the excavation carried down into sterile soil, but at no point was it possible to clearly define a floor or living surface of any sort.

The post holes themselves usually contained decayed or charred remains of the original posts. However, it was found impossible to define a good post mold for any posts, which implies that the posts were driven into the ground, rather than set with clay. Since post molds were lacking, a conscious effort was made to ignore soft spots and mere color changes in the soil, so that root channels and rodent burrows would not be reported as post holes.

The posts appeared to have been small in diameter. It was impossible to determine the depth to which they were driven, since they were not removed, once discovered. The intervals between posts ranged from 0.3 feet (Posts 19, 20) to 41.1 feet (Posts 38, 39; 29, 30).

The location of the surface structure excavated is typical of the San Juan Anasazi area. The mapped portion (Fig. 32) curves from the north to west of Feature 2, "protecting" this pit house on the northwest. However, the unit or units composing Feature 3 are more difficult to define than the posts.

In certain areas, e.g., Posts 1, 2, 4, 5, it was noted that the posts tended toward a zigzag alignment. This appearance suggests that the posts were staggered so that branches or twigs could be woven between them to form the basis for a jacal structure. However, it is possible that the entire struc-

LA 4247		SAN JUAN GRAY WARES					SAN JUAN BROWN WARE	SAN JUAN WHITE WARES			SAN JUAN RED WARES		MESA VERDE GRAY WARES		GRAND TOTAL
		ROSA GRAY	ROSA NECK-BANDED	ARBOLES GRAY	ROSA B/W		ROSA BROWN	PIEDRA B/W	CHAPIN B/W	UNIDENTIFIED, POLISHED	ABAJO R/O	BLUFF B/R	CHAPIN GRAY		
					CARBON	GLAZE							CHAPIN	TWIN TREES	
SURFACE SURVEY		143 85.1%		8 4.8%		4 2.4%	1 0.6%	4 2.4%	1 0.6%			1 0.6%	6 3.6%		168
FEATURE I	Fill	39		9		1									49
	Floor	15											1		16
	Total number	54		9		1							1		65
	Total percent	83.1		13.8		1.5							1.5		
FEATURE II	Fill	75	4	3	8		1				5				96
	Floor	22													22
	Total number	97	4	3	8		1				5				118
	Total percent	82.2	3.3	2.5	6.7		0.8				4.2				
FEATURE III	Surface	33	1	1			1					2	6	1	45
	Fill	14	1		1		11					3	1		31
	Total number	47	2	1	1		12					5	7	1	76
	Total percent	61.0	2.6	1.3	1.3		15.8					6.6	9.2	1.3	
F. IV	Test Pit	10 71.4%		2 14.3%				1 7.1%		1 7.1%					14
F. V	Test Pit	02 81.6%	1 0.8%	18 14.4%		1 0.8%		1 0.8%		2 1.6%					125
TOTAL NUMBER		453	7	41	9	6	14	6	1	3	5	6	14	1	566
TOTAL PERCENT		80.0	1.2	7.2	1.6	1.1	2.5	1.1	0.2	0.5	0.9	1.1	2.5	0.2	100%

Fig. 33. Provenience for pottery types from LA 4247.

ture was of an open-air or ramada type. No floors or living surface could be defined clearly, nor were the surface hearths constructed. The lack of definable adobe and roof-fall remains would suggest an open-air structure. However, Feature 3 does not appear to have been severely burned, and if a jacal or adobe structure existed, it is quite possible that the main body of the walls had eroded away or reverted to mud.

Hall (1944, p. 66) lists surface granaries, but not dwellings, as traits of the Rosa Phase. Hall's rows of posts are identified as stockades, probably constructed for defense, rather than rooms. The possibility of the numerous post holes of Feature 3 forming a stockade was considered. However, both their irregular arrangement (Hall, 1944, p. 28) and slender size fail to support this interpretation. Brew (1946, p. 196) has domiciliary surface structures from Site 13, Alkali Ridge, dated about A.D. 700. If, as determined by pottery analysis, Site LA 4247 was occupied between A.D. 800 and 900, there is no reason to rule out the possibility of surface dwellings being used. Watson (1954, p. 3) describes Pueblo I, A.D. 750 to 900, as the period during which surface dwellings of masonry or post and adobe construction became popular. Assuming diffusion of surface dwelling tradition, perhaps from Mesa Verde, where contiguous surface units seem well advanced by Chapin Mesa Phase (O'Bryan, 1950, pp. 105-107), it is feasible that the inhabitants of the upper San Juan should be living at least seasonally in surface structures, as well as using them for storage and work areas.

This possibility of a mixed surface construction should not be overlooked in interpreting the various post placements of Feature 3. Brew (1946) says that it is entirely logical to have ramadas associated with surface structures, as well as isolated by themselves. It is possible that Posts 15 - 25 constitute the wall of a structure while Posts 5 - 13, Posts 16 and 17 and their presumed extension, and perhaps an extension indicated by Post 26, constitute partition walls of rooms, ramadas, or even turkey pens facing toward Feature 2. The remainder, save Posts 39 - 45, are more widely spaced and irregularly placed, and could reasonably constitute the frame of a more temporary or open structure. Posts 39 - 45, again tightly spaced, may indicate the beginning of another jacal structure. Aberrant Posts 22 and 23, and 33 and 34, suggest additional construction extending northwest and north of the main post arc excavated.

The evidence discussed above: the close spacing of the posts, as well as discernible rock alignments and general layout, could imply some sort of permanent living structure, such as those described by Brew (1946) and Morris (1939). However, the safest conclusion seems to be that this was a storage and work area of ramada and jacal structures. The large number of post holes can be explained either as the replacements of fallen posts over a long time span, or perhaps as a taste on the part of the builders for sturdy shade structures.

ARTIFACTS

Ceramics

LOCAL WARES (ROSA/PIEDRA)

Sherd types, numbers, and percentages are presented in Figure 33. Of the 566 sherds collected, Rosa Gray predominates over all other types (80%). This type is nearly identical to the subtype of Rosa Smoothed from the Gobernador, described by Hall (1944, p.34). The sherds from LA 4247 are tempered with local river sands, heterogeneous in composition, often granular in appearance, and apparently gathered at random from the local streams. In contrast to later local types, as well as trade wares, Rosa Gray lacks inclusions of andesite or crushed rock.

Many vessels of Rosa Gray were started in baskets. Often the imprint of the basket used in construction was retained, no attempt being made to obliterate these marks. Neck forms are generally high, and rims vertical or slightly thickened. One subtype, Rosa Neckbanded, is distinguished by one to five rows of banding encircling the neck. However, this effect is generally sloppy, particularly when compared to the carefully executed "washboard effect" obtained by Kana-a Gray from the Four Corners region. Other modeling on Rosa Gray includes fillet bottoms and braided handles (Fig. 35-a-d).

Only one partially reconstructable vessel of Rosa Gray was recovered. Twelve pieces from Hole F in Feature 2 formed a small bowl with flat bottom and spherical walls. Unfortunately, no rim sherds were present.

Hall's second subtype of Rosa Smoothed, Rosa Brown, was also present in limited quantities (2.5%). This type was easily distinguished by its brown color and fine soft paste. The temper consists of fine river sand, and lacks the miscellaneous inclusions found in Rosa Gray. In its temper, Rosa Brown looks more like rolled-sand tempered Lino Gray than Rosa Gray, and contrasts more strongly with crushed igneous rock-tempered Chapin Gray. Presumably the manufacture of Rosa Brown began earlier than that of Rosa Gray, and became more and more specialized toward the production of pipes, effigy vessels, and miniature vessels (Hall, 1944, pp.33-34), while Rosa Gray took over utilitarian functions (Fig.35-e).

The single Rosa Phase decorated pottery, Rosa Black-on-White, is poorly represented in the collection (2.7%). Two varieties can be distinguished; one with glaze paint, and one with carbon. Both varieties usually are unslipped. However, the significance of the variety difference appears to be one of space, rather than time.

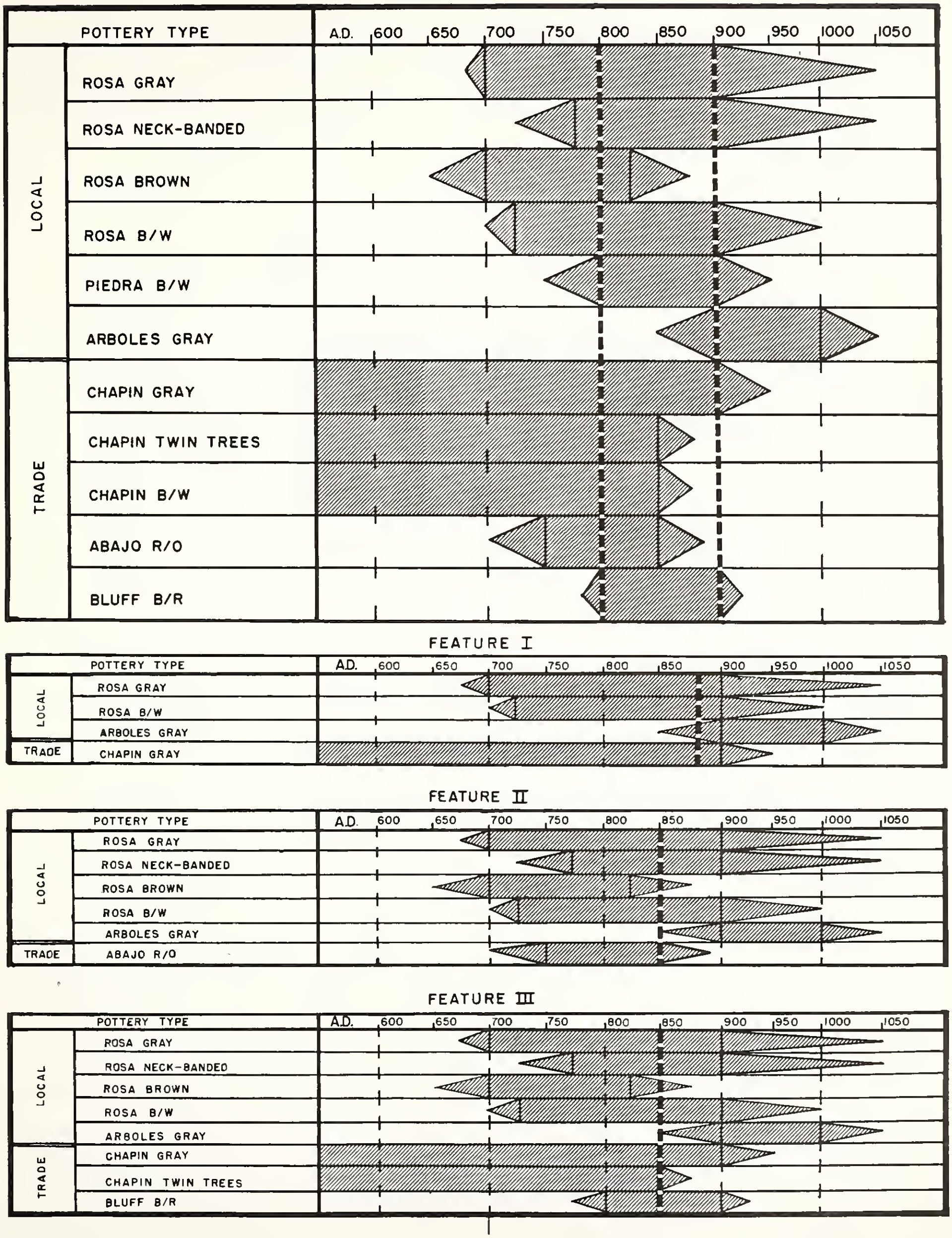

Fig. 34. Ceramic time type chart for LA 4247. Dashed lines indicate suggested dating of site LA 4247 and features. Type dates after Colton (1955),Abel (1955) and Dittert (1961).

Rosa Black-on-White (Glaze) was produced in the north of the Reservoir, and developed into Piedra Black-on-White, with iron paint, by A.D. 850; while Rosa Black-on-W White (Carbon) was produced in the south of the Reservoir, and provided a base for Rosa/Gallina Transitional (Hall, 1944, p. 38). The paste of Rosa Black-on-White is identical to that of Rosa Gray.

LOCAL WARES (PIEDRA/ARBOLES)

A provisional type, Arboles Gray, has been defined for the Piedra and the upper San Juan. Apparently a later development of Rosa Gray, it can be easily distinguished by its dark gray paste, including large amounts of sizeable angular white andesite and feldsparoid temper. Though Arboles Gray probably persists until A.D. 1050, its first appearance is at present uncertain. It seems to be lacking during the Rosa Phase proper (A.D. 700 to 900), and only to begin during the Piedra Phase (A.D. 850 to 950). One other type appearing after A.D. 850 was encountered, Piedra Black-on-White. It is set apart from Rosa Black-on-White chiefly by the use of crushed rock as temper, a smaller percentage of carbon in the paint, and design style change. Also, the percentage of slipped vessels increases. It is sufficently similar to the Mesa Verde decorated types (Abel, 1955) to be classified as a San Juan White Ware. The six sherds of Piedra Black-on-White encountered were found either in the fill, or on the surface, of LA 4247. Forty-one sherds of Arboles Gray, included in the totals, were also found on the surface or in the fill of the excavated structures, and cannot be used as secure evidence for late occupation.

TRADE WARES

Locally produced San Juan Gray Ware, as well as the single Brown type, accounted for 93.6% of the total collection. Decorated wares, both local and trade, were extremely scarce - less than 7% of the total collection. Two types within the San Juan Red Ware, Abajo Red-on-Orange (Brew, 1946) and Bluff Black-on-Red (Abel, 1955), suggest contact with, or influence from, the Mesa Verde region or beyond. The eighteen sherds of Chapin Gray, and one of Chapin Black-on-White, also support this hypothesis.

CONCLUSIONS

The entire collection from LA 4247 fits well into a late-Rosa/early-Piedra Phase (ca. A.D. 850). The time-type chart (Fig. 34) suggests an occupation shortly after A.D. 800, and a desertion prior to A.D. 900. However, the presence of sherds of Arboles Gray in the fill of Feature 1, as well as the lack of earlier types (Rosa Brown, Abajo Red-on-Orange) which were found in the fill of Feature 2, suggests a slight difference in occupation between the two pit houses. The sherds taken from the surface structure, Feature 3, tend toward the earlier end of the probable period of occupation.

Unfortunately, no "markers" within the Rosa Phase appear among the types collected from LA 4247. It is well known that types persist, and safe ceramic placement must follow the most recent types recovered, providing they are stratigraphically intermixed in the assemblage. For example, though Abel (1955) suggests an end date for Abajo Red-on-Orange, A.D. 850, sherds of this type are reported from A.D. 876 (Hall, 1944, pp. 18-19) from A.D. 872 (Martin, 1939, p. 338), and from A.D. 700 to 900 (O'Bryan, 1950, p. 107). Since Arboles Gray is too poorly known to serve as an indicator, Piedra Black-on-White probably offers the best evidence for post A.D. 850 occupation. However, even this type was encountered only in the fill and on the surface, and its presence must be interpreted with caution.

Despite the resemblance of Rosa Gray and Rosa Brown to Lino Gray, from regions south and west of the San Juan River, no trade wares were encountered at Site LA 4247 from regions where Lino Gray is prevalent. It should be noted, however, that in the south of the Reservoir District, where a few sherds of Lino Gray have been found, they are all associated with Rosa Brown

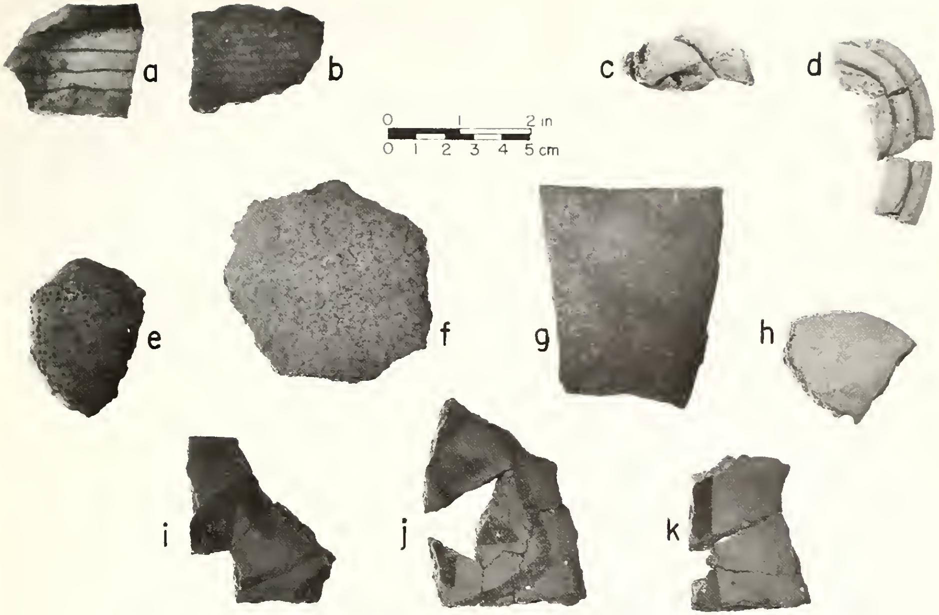

Fig. 35. Sample of pottery from LA 4247.

(Dittert, Hester, and Eddy, 1961, p. 149). As mentioned above, both types use a selected sand temper. Perhaps more suggestive than this use of sand rather than crushed-rock temper, is the use of a carbon rather than a mineral paint on some Rosa Black-on-White. The upper San Juan is entirely surrounded by areas using only mineral paint. Not until after the Reservoir District is deserted does a carbon paint come into vogue in a nearby area (McElmo Black-on-White, A.D. 1130 to 1375). Only to the southwest, beyond the Chuska-Lukachukai Mountains associated with the Lino Focus of the Kayenta Branch, is a type similar to Rosa Black-on-White prevalent during a comparable time range. Rosa Black-on-White is accepted by Abel (1955) as a regional variety of this type, Lino Black-on-Gray. It is unknown whether Rosa potters were receiving influence from the Chaco regions where Lino Black-on-Gray occurs at Shabik-eschee, probably as a trade ware, or if they were in direct contact with southern Utah and northern Arizona, along the San Juan.

Artifacts of Stone

GROUND AND LARGE FLAKED STONE

Metates (15): Fifteen whole or partial metates were recovered. Nine were complete enough for classification. Two forms were distinguished: open and closed. In the open metate (Fig. 37-b), the groove, or trough, is flat, runs the entire length of the block, and is open at both ends. In the closed metate (Fig. 37-g, 38), the groove extends only part way up the face of the stone, resulting in a horseshoe rim.

Closed Metates (7): Length, 22.75 inches to 19.25 inches; width, 16.75 inches to 8.5 inches; thickness, 6 inches to 2.5 inches. Sandstone.

Open Metates (2): Length, 16.25 inches to 14.5 inches; width, 10.25 inches to 9.0 inches; thickness, 5.0 inches to 3.5 inches. Sandstone.

Manos (12): Six were whole and six were incomplete. They varied in length from

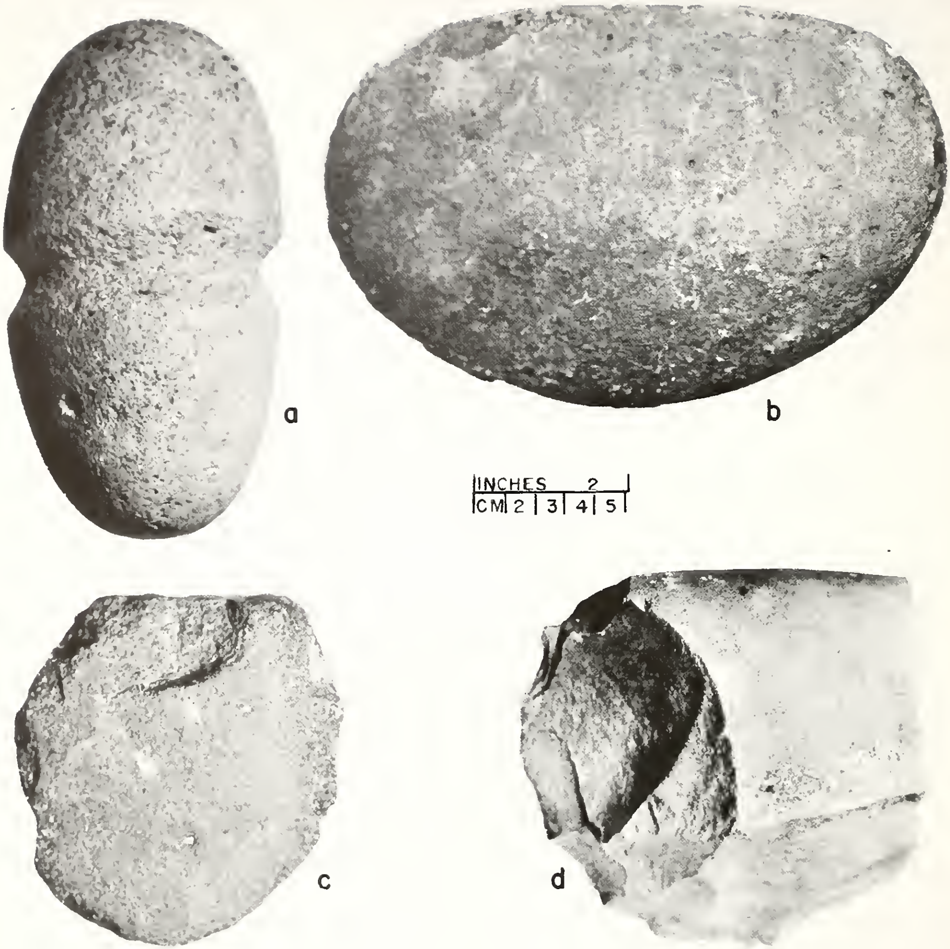

Fig. 36. Artifacts of stone from LA 4247. a, stone maul from Feature 3; b, mano from Feature 2; c, hammerstone from surface, d, chopper, both from Feature 3.

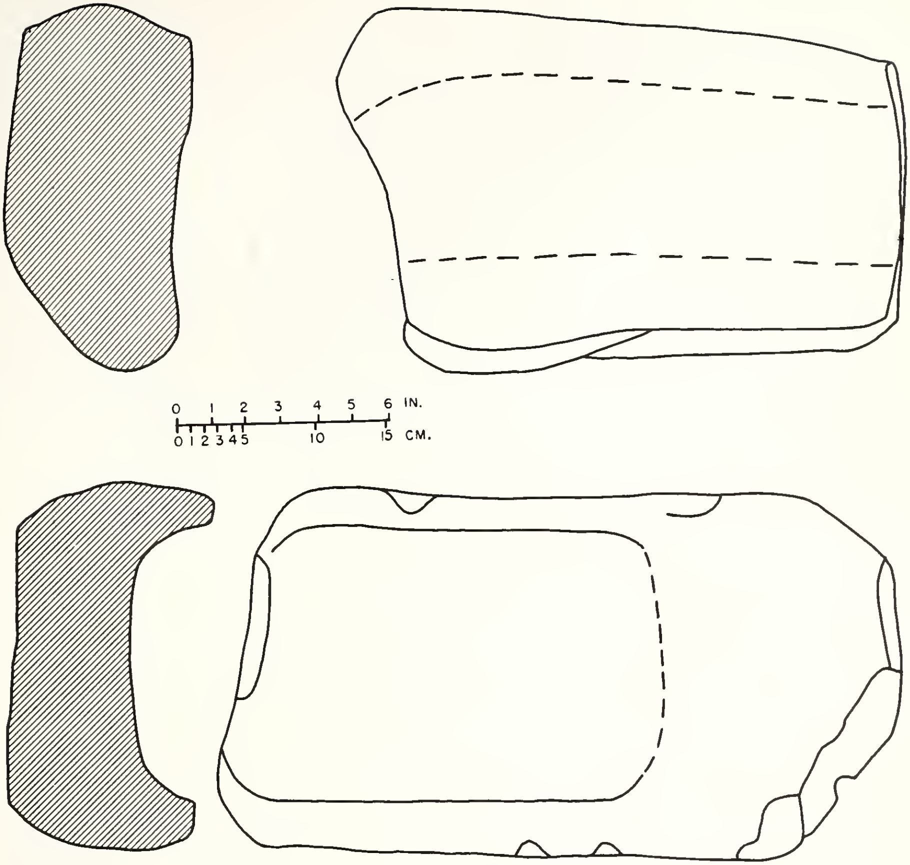

Fig. 37. Drawing showing two typical metate styles from LA 4247.

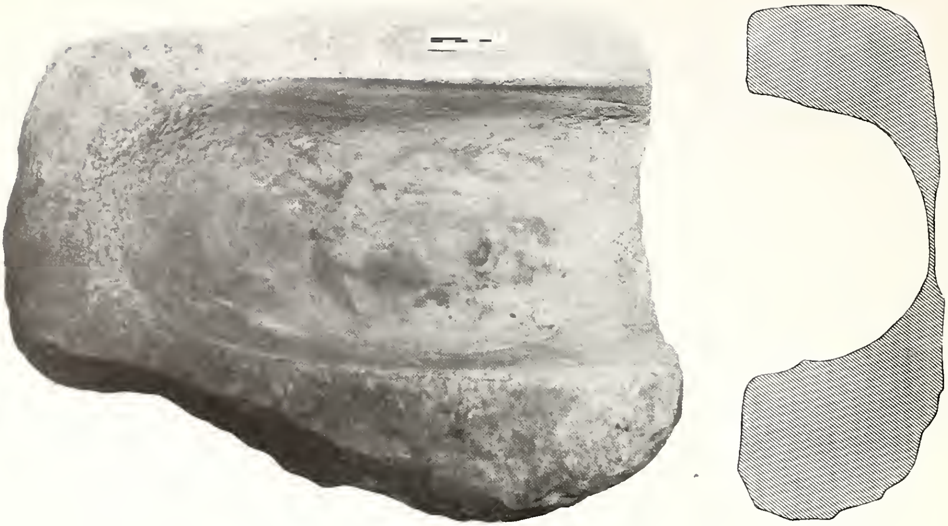

Fig. 38. Deep trough metate from fill of Feature 2, LA 4247.

8.0 inches to 4.0 inches; width, 5.4 inches to 3.4 inches; thickness, 0.25 inches to 0.12 inches. Sandstone.

Maul (1) (Fig. 36-a): One full grooved maul was recovered. Length, 6.5 inches; thickness, 3.4 inches. Groove approximately 0.4 inches wide and 0.25 inches deep. Fine-grained granite.

Chopping tool (1) (Fig. 36-d): Monofacial, percussion flaked, to give a half circle cutting edge. Length, 5.0 inches; width, 4.5 inches; thickness, 2.5 inches. Quartzite.

Hammerstone (1) (Fig. 36-c): Apparently an unwanted mano converted to another use. Length, 4.5 inches; width, 4.1 inches; thickness, 0.19 inches. Roughly percussion flaked on the sides, with one end exhibiting evidence of pounding. Quartzite.

Palette (1): Irregular shaped, flat-sided. Length, 4.5 inches; width, 3.6 inches; thickness, 1.25 inches. Its one polished surface retained a small area of red pigment. Sandstone.

Unidentified tool (1): A roughly triangular mano fragment. Length, 3.75 inches; width, 1.7 inches; thickness, 0.75 inches. Flaked along one edge. Use undetermined.

Miscellaneous Polished Stone (1): Fragment of greenish-brown stone. Irregular in shape. Length, 6.89 inches; width, 4.92' inches; thickness, 2.61 inches. One flat, highly polished surface. Origin and identity undetermined.

FLAKE TOOLS

Knives (4) (Fig. 39-b, d, e, f): Miscellaneous flakes bifacially reworked along one or more edges. Cutting edge either straight or convex. Length, 2.57 inches to 0.97 inches; width, 1.43 inches to 0.52 inches; thickness, 0.3 inches to 0.1 inches. Chalcedony (3), obsidian (1).

Scraper (1) (Fig. 39-a): Triangular flake with an irregular spall removed from one side. Length, 2.9 inches; width, 1.4 inches; thickness, 0.12 inches. Obsidian.

Burin or Graver (1) (Fig. 39-c): Flake, roughly parallelogram in outline, with one projecting corner retouched to a point.

Length, 1.15 inches; width, 0.9 inches; thickness, 0.3 inches. Chalcedony.

Artifacts of Bone

AWLS

Made from the long bones of either deer, large birds, or rabbits.

Complete Awls (2) (Fig. 40-f): Length, 6.89 inches to 4.5 inches; thickness, 0.7 inches to 0.61 inches. Deer bone (1), bird bone (1).

Fragmentary Awls (4) (Fig. 40-c): Length, 5.12 inches to 2.15 inches; thickness, 1.0 inches to 0.25 inches. Deer bone (2), bird or rabbit (2).

Unfinished Awls (1) (Fig. 40-e): Cannon bone of a deer, with a deep groove cut into either side, preparatory to splitting. Length, 7.61 inches; thickness, 1.19 inches.

PERFORATED BONES

Two large bird or rabbit long bones, with a hole drilled into the narrow cavity, 0.61 inches from the distal end. Medial end cut off, and narrow cavity hollowed out. Length, 5.25 inches to 4.75 inches; thickness, 0.75 inches to 0.58 inches. Possibly whistles or "tinklers". (Fig. 40-g, h).

MISCELLANEOUS WORKED BONES

Polished Bone Fragment (1): Medial half of a large bird bone. Highly polished body, groove started in one side, approximately 0.25 inches from the medial end. Length, 3.97 inches; thickness, 0.7 inches. Presumably the base of an awl.

Split Bone (1) (Fig. 40-d): Leg bone of a large animal, split lengthwise, inner or split side ground and polished. Length, 9.97 inches; thickness, 0.57 inches. Probably a spatula.

Worked Tibia (1): Human tibia, with a hole approximately 0.57 inches in diameter drilled through the medial end into the narrow cavity. The epithysical cap is present, but very fragmentary. Length (minus epithysial cap), 11.61 inches; thickness, 2.5 inches.

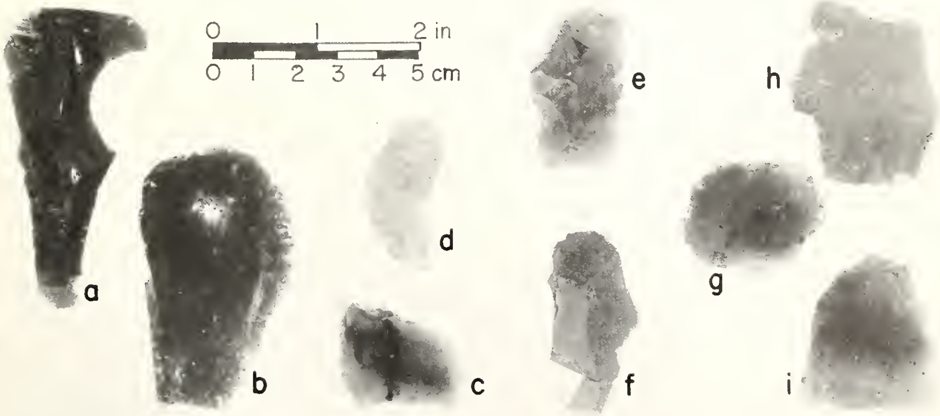

Fig. 39. Cache of flake tools found in Feature 1, LA 4247. a, obsidian hollow edge scraper; b, obsidian knife; c, chalcedony scraper with possible graver point; d, chalcedony knife or scraper; e, chalcedony chisel; f, quartzite chisel; g-i, unutilized chalcedony flakes.

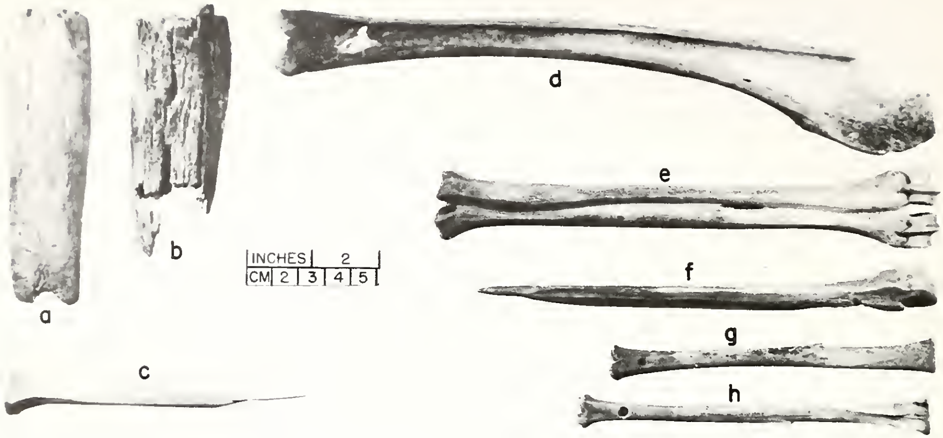

Fig. 40. Worked bone and antler from LA 4247. a, b, antler fleshers; c, f, bone awls; d, bone spatula; g, h, bone flutes; e, cannon bone split for the manufacture of awls (note similarity between e and f).

Artifacts of Antler

CHISELS

Elk antler (2) : Characterized by a ground chisel edge on one end, and flattening and percussion flaking around the other end. Length, 4.52 inches to 4.0 inches; thickness, 1.47 inches to 1.4 inches.

FLESHERS

Elk antler (2) (Fig. 40-a, b): Characteristics much like chisels, but lacking the signs of use (percussion flaking, etc.) of the chisel. Length, 7.21 inches to 6.58 inches; thickness, 1.5 inches to 1.47 inches.

Ceramic Artifacts

SPINDLE WHORLS

Rosa Gray (2) (Fig. 35-h): Pie-shaped fragments. Length, 1.81 inches to 1.61 inches; width, 2.57 inches to 1.45 inches; thickness, 0.25 inches in both cases.

PUNCTATE SHERD

Rosa Brown (1) (Fig. 35-e): Presumably part of a duck effigy. Punctate design on the outer or convex side. Length, 2.3 inches; width, 1.69 inches; thickness, 0.57 inches.

DISCUSSION

Excavation of Site LA 4247 confirmed surface survey indications. Both pit houses uncovered appeared nearly identical. Neither slight differences in shape, nor presence of additional floor features, indicated more than individual variation. The absence of earlier pottery types in Feature 1 is only negative evidence for suggesting a slight time difference between the two houses. If one pit house had been abandoned or burned while the other was occupied, a certain amount of trash accumulation should have been detected in the fill of the former. Though the surface structure (Feature 3) was not excavated completely enough to reveal clearly its nature, close physical association with the two pit houses, as well as identical ceramic content, places its occupation at the same time as the pit houses.

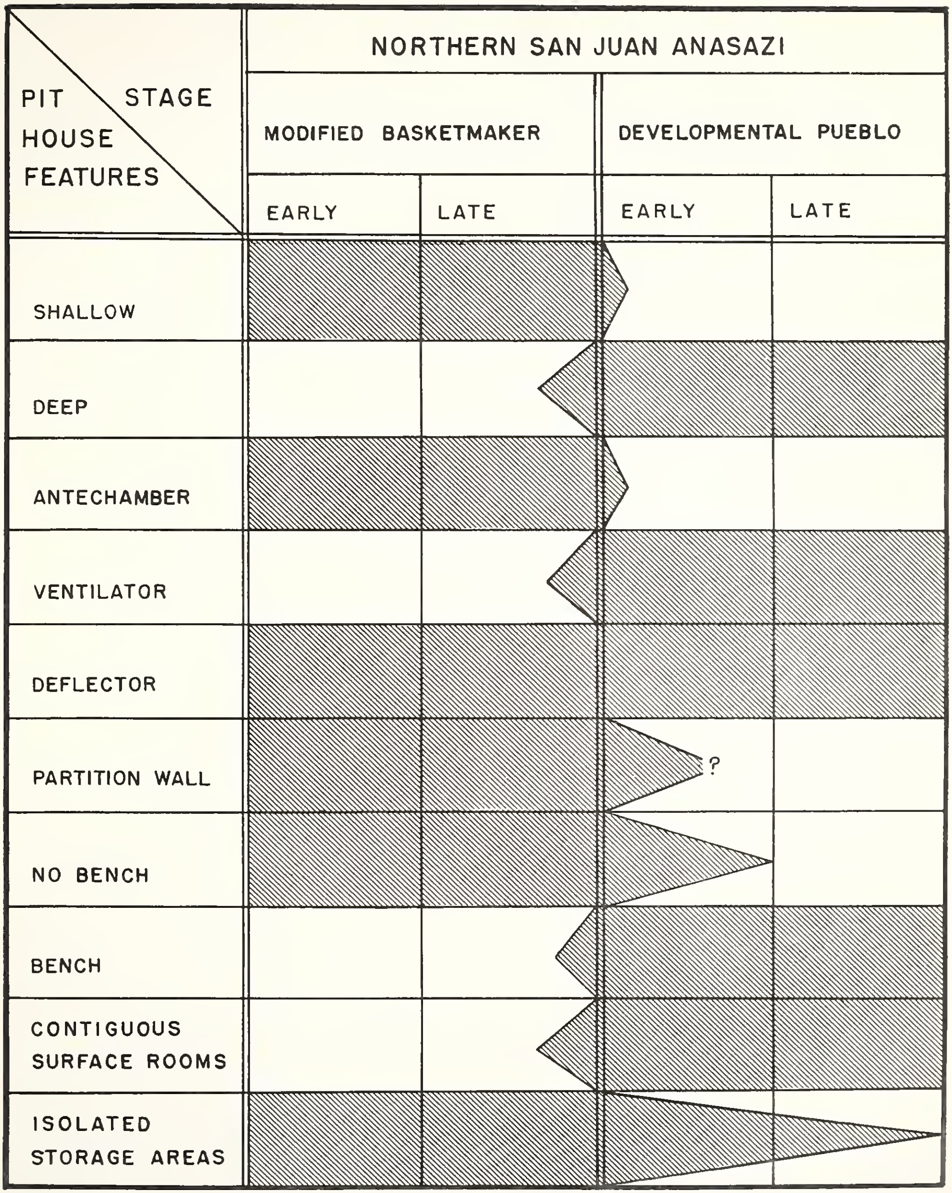

Fig. 41. Selected features of pit house architecture, the stage in which they first occur and their known duration. See text for discussion.

The evidence for precise placing of the site in a chronological or typological Basket Maker III or Pueblo I position is inconclusive. Neckbanded pottery and other types present in the fill suggest the occupation of LA 4247 may have lasted past A.D. 850. However, the pit house and surface structure architectural complex is still closely related to that identified as Basket Maker III by Morris (1939), O'Bryan (1950), Brew (1946), and Martin (1939).

The remnant partition wall of Feature 1, and the south platform of Feature 2, are characteristic of a Modified Basket Maker way of life. Morris (1939, p. 25) reports "radial ridges of mud" as partitioning techniques typical of Basket Maker III. Brew (1946, p. 157) describes changes in floor level in his "type II" Basket Maker-Pueblo I pit house; "the entire southern end was a sort of low dais with a wall at the front of it." These walls gained in importance during Basket Maker III, but in Pueblo I, they faded to a remnant (O'Bryan, 1950, p. 40). Evidently, the wall of Feature 1, if it did exist, was removed and plastered over. This remodeling may indicate that Rosa Phase residents spanned the transition suggested by Morris and O'Bryan. A divergent evolution appears to have taken place in the Chaco region to the south. Bullard and Cassidy (Wendorf, 1956, pp. 56-60) report a Basket Maker III pit house from McKinley County, New Mexico, with wing wall of rounded clay ridges three inches high. These partitions, instead of disappearing in succeeding phases, gain in importance until they become true walls of masonry (Wendorf, 1956, pp. 67-70, Fig. 61).

O'Bryan (1950, p. 104) most closely described the LA 4247 pit houses. Defining the architecture of his Four Corners Phase (A.D. 500 to 700), he mentions circular form, southeast orientation, four vertical roof supports, low partition wall, storage bins, floor pockets, and the absence of deflectors. Though antechambers are the rule, depths given for the houses range up to two meters. Unfortunately, his excavation report and the plan of Pit House 1 and 2, Site 145, only roughly conform to his phase description (1950, pp. 55-61). However, more recent excavation at Mesa Verde (Lancaster and Watson, 1954) substantiate O'Bryan's description, and support the similarity between Mesa Verde pit houses constructed at the close of the Seventh Century, and those of the Rosa Phase. The pit houses described and illustrated for O'Bryan's next phase, Chapin Mesa (A.D. 700 to 900), are rectangular, bordered by contiguous slab rooms, usually have a deflector, and generally appear more advanced than the two Rosa Phase houses excavated.

Attempts were made to compare the two excavated pit houses with the "proto-kivas" described by Morris (1939, pp. 69-72). The depth of these La Plata "typical late Basket Maker III" pit houses, their round outline, four posts, reduced size of antechamber-ventilator, low partition walls, and reduced number of floor pits and basins, all seem closely similar to Features 1 and 2. Unfortunately, the well-developed surface unit with rows of store rooms and domiciliary structures flanking the "proto-kivas," plus the presence of neck-banded pottery, could easily identify this site as Early Developmental Pueblo. Morris recognized that some might wish to call this site Pueblo I, and fell back on lack of skull deformation as a diagnostic factor. Since the concept of a "round head" invasion has been discarded, and since no tree ring dates were available, Morris' Site 23 is probably near the beginning of Pueblo I. Hall (1944, pp. 64-65) accepted Morris' site as earlier than, or contemporaneous with, his Gobernador excavations, and cited the advanced La Plata surface structures to support the "marginality" of his Rosa Phase sites.

The absence of benches in Features 1 and 2 is suggestive. However, O'Bryan (1950, p. 59) illustrated a well-developed bench in a Four Corners Phase house, and a benchless house from a Chapin Mesa Phase site (1950, pp. 42-43). Lancaster and Watson (1954, pp. 7-22) give tree ring dates terminating with A.D. 674, from a pit house with a well-developed bench. On the other hand, Martin (1939, p. 342), though calling his houses "Modified Basket Maker," illustrates several houses dated in the latter half of the Ninth Century, without benches, and containing a predominance of Lino Gray, Kana-a Gray, and Abajo Red-on-Orange. Rio Grande pit houses, to the southeast, apparently lacked benches throughout all periods. Peckham (1957, pp.39-57) describes a series of houses near Albuquerque, New Mexico, possibly as recent as Pueblo II, without benches and quite similar to those excavated at LA 4247.

Of particular interest, in the pit houses excavated by Lancaster and Watson mentioned above, is the light shed on the shift from antechamber to ventilator shaft in pit house architecture. The later pit house, though undated by tree ring samples, has a ventilator shaft, rather than an antechamber. They speculate, that this later one was an enlargement of the antechamber of the earlier one. If this is correct the inconsistent changes in architectural style of the late Eighth Century are again demonstrated. These changes eventually lead to the diagnostic traits of Pueblo I pit houses, but cannot be taken as conclusive evidence in themselves. Martin (1939, pp.342-349), at the Ackmen-Lowry site in southeastern Utah, illustrates remodeling which filled the original antechamber with adobe, and converted it into a "bin-like box of slabs and masonry" with a fresh air opening at the top. In developed Pueblo I style, intersecting shaft and tunnel ventilators supersede the large antechambers of Basket Maker III, and occur almost universally (Brew, 1946, p.209).

The bifurcate ventilator shafts of Feature 1, and possibly of Feature 2, are present in other Rosa Phase houses along the upper San Juan River, reports of which are presently unpublished. The only published description known is at a Pueblo I house from the La Plata region (Morris, 1939, pp. 67-72). This shaft originally had a single central opening, later blocked, and two dug side vents, which connected with the original exit shaft. This is just the reverse of the single opening of Feature 1, which branches and has two exits. Regardless of form, the presence of a ventilator shaft, rather than an antechamber, would tend to place Features 1 and 2 later than the absence of a bench and presence of a bench and presence of a partition wall would indicate. It is possible that a filled antechamber was missed during the excavation of Feature 1, and that the uncovered remnant wall once functioned as a deflector.

The presence or absence of a deflector appears to be related to the change from antechamber to ventilator. Possibly a deflector was more essential in blocking the greater drafts created by a large antechamber than those created by the small ventilators. The bifurcated ventilator of Feature 1 may have used only a damper to control air flow, as no evidence for a functioning deflector was discovered. The three large cobbles, in position at the bottom of the north vertical shaft, may have served this purpose. Hall (1944, p. 66), for some reason, considers the appearance of deflectors as a late development in his Rosa Phase.

Depth of pit house excavation offers as secure a basis for chronological placement as the architectural features mentioned above. Though a trend from shallow early Basket Maker III houses to deep early Pueblo I houses has been well established (Brew, 1946, pp.203-206) by the end of the Seventh Century, houses with an average depth of four feet were already being constructed in the Mesa Verde area (Lancaster and Watson, 1954, p. 9). Also in this region, O'Bryan (1950, p. 104) describes Four Corners Phase houses (A.D. 550 to 700) as varying in depth from one third to two meters. At Alkali Ridge, Pit Houses F and G, Site 13, tree ring dated at 700 ± 10 (Brew, 1946, pp. 172-176) probably ranged between 3.25 and 4.0 feet in depth. Brew (1946, p. 154) call them "type II, small deep pit houses," and considers them Basket Maker III-Pueblo I.

The four post holes present in the floor give no aid in typing the two pit houses. Although the posts are usually located in the wall by late Pueblo I, they occur also as a conservative trait throughout this period. The size of the two pit houses, eighteen to twenty feet in diameter, fits into a middle range, and also cannot be used as a diagnostic trait.

Feature 3 of LA 4247 provides a little correlative information, if the surface units associated with Basket Maker III and Pueblo I pit houses are considered. Slab-lined cists in isolation, considered as diagnostic of Basket Maker III, were not found on the surface of the site. However, neither were developed contiguous surface units defined; nor storage rooms or living quarters (Morris, 1939, p. 67). Though a storage or work area is indicated by the excavated portion of Feature 3, such non-living units presumably occurred throughout the Basket-Maker III-Pueblo I time span. They are described by Martin (1939, pp. 250, 255, 294, 461) as "stockade-like" jacal structure used "merely as granaries." Similar jacal structures are mentioned by Hall (1944, p. 16) and referred to as "storage and work areas," in the Ninth Century.

A jacal "house" near Ignacio, Colorado, is reported by Fenenga (Wendorf, 1956, pp. 205-207) as "very early in Basket Maker III times." In the same area, Fenenga and Wendorf recognized scattered single units as "areas some twenty to thirty feet in diameter of charcoal, burned soil, fractured rocks, and chunks of baked 'daub' from burned jacal structures" (Wendorf, 1956, pp. 207-214). They suggest a date as early as Basket Maker II.

An excellent functional explanation for the frequent occurrence of jacal, or pole and brush surface remains, is offered by Brew (1946, p. 224). Though referring to a later time range (Pueblo II), he speculates that the American Indian "did not make a habit of sitting out in the broiling sun," and that it is not difficult to visualize "an indifinite number of sage-covered wooden shelters propped against houses, held up by posts set into the ground." Further, he says "such shelters may very well have existed completely detached from the permanent buildings."

In regard to the nature and use of the surface area of LA 4247, it is indicative that both pit houses lack the numerous pits, bins, and niches in their walls and floors which are common in Basket Maker III sites. This characteristic may indicate an increase of domestic activities, requiring bins, vessel supports, and storage areas, that moved occupation from pit houses to surface structures.

The inconclusiveness of the architectural evidence, for either chronological or typological placement, is presented graphically in Figure 41. Several approaches may be taken to solve the problems presented. The first, and perhaps most sensible, is to interpret the Pecos classification as a series of defined chronological compartments, and to place LA 4247 in time on the basis of whatever date is assigned. With luck, such a date may be based securely on tree ring samples, or more tentatively, on typological comparisons with other absolutely dated sites. Since the chronological placement of LA 4247 depends almost solely upon ceramic analysis, a second approach may be combined with the first. A single type of ware can be taken as diagnostic of each Pecos period, and on the basis of its appearance, a site assigned to the proper category. A third approach, which is really an evasion, is to use "marginal or "peripheral" terminology (Hall, 1944) or invent new categories cross-cutting the old (Brew, 1946).

Since both Dittert's estimated dates (1958, p. 12) and Hall's tree ring dates for Rosa Phase both fall within Pecos Pueblo I, and since LA 4247 clearly falls within the range defined for this phase, the two pit houses and surface unit may be referred to as Pueblo I. Since neckbanded rims are present in Features 2, 3, and 5, LA 4247 may also be placed in Pueblo I. However, the ceramics in actual floor contact are all non-diagnostic; no tree ring specimens were obtained, and architectural features are inconclusive. Therefore, though the side-stepping tactic is recognized, it is still felt that Site 4247 must be referred to either as a "marginal Anasazi development," lagging behind Mesa Verde or the Chaco, or be placed in a transitional Modified Basket Maker-Early Developmental Pueblo stage. Perhaps the whole problem could be avoided by simple description, rather than classification; by taking a modified "Gladwin approach," defining Rosa Phase in its own regional terms, comparing it only to other phases in other regions at the same time.

Perhaps the most important conclusion to be derived from the above discussion, is related to the continuity of Basket Maker III and Pueblo I. No definite criteria for division appear to hold, even in the Mesa Verde-Northern San Juan Region, and probably each sub-area or phase alternately lagged and advanced through time. Late Modified Basket Maker and Early Developmental Pueblo appear to be identical stage-designations, during which the "radicals and conservatives" of Brew's (1946, pp. 208-209) resurrected Pueblo builders refused co-operatively to accept convenient chronological markers.

This problem is recognized by Brew (1946, p. 63), in his admission that: "In my own experience I have never seen a Southwestern site which did not present, in a single occupation-level, criteria of at least two major cultural periods." Therefore, fortunately perhaps, the archaeologist is always thrown back upon his own judgment and experience, in assigning his sites to pigeon holes. He can never rely upon a simple panacea for classificatory problems. Cultural questions, historic or prehistoric, are not answered like chemical ones, by simple tests for presence or absence. All elements must be weighed and discussed before answers are attempted, and decisions made.

BIBLIOGRAPHY

Abel, L. L.
1955 Wares 5A, 10A, 10B, 12A. Pottery types of the Southwest, Ceramic Series No. 3. Museum of Northern Arizona.

Brew, J.O.
1946 Archaeology of Alkali Ridge, Southeastern Utah. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol.21. Cambridge.

Bullard, W.R.Jr. and F.E.Cassidy
1956 The San Juan Pipeline Project. In: (Fred Wendorf, Nancy Fox, and Orian L. Lewis, ed.) Pipeline Archaeology, pp.16-56. Laboratory of Anthropology and Museum of Northern Arizona, Santa Fe and Flagstaff.

Dittert, A.E.Jr.
1958 Preliminary Archaeological Investigations in the Navajo Project Area of Northwestern New Mexico. Navajo Project Studies:I. Museum of New Mexico Papers in Anthropology, No. 1. Santa Fe.

Dittert, A.E.Jr., F. Eddy and J.J.Hester
1961 An Archaeological Survey of the Navajo Reservoir District, Northwestern New Mexico. Navajo Project Studies:II. Museum of New Mexico Papers in Anthropology, No.3. Santa Fe.

Fenenga, F.
1956 Excavations on Trunk O. In: (Fred Wendorf, Nancy Fox, and Orian L. Lewis, ed.) Pipeline Archaeology, pp.204-207. Laboratory of Anthropology and Museum of Northern Arizona. Santa Fe and Flagstaff.

Fenenga, F. and F. Wendorf
1956 Excavations at the Ignacio, Colorado, Field Camp. In: (Fred Wendorf, Nancy Fox, and Orian L. Lewis, ed.) Pipeline Archaeology, p.207. Laboratory of Anthropology and Museum of Northern Arizona Santa Fe and Flagstaff.

Gladwin, W. and H.S.
1934 A Method for Designation of Cultures and Their Variations. Medalion Papers, No.15. Globe, Arizona.

Hall, E.T.Jr.
1944 Early Stockaded Settlements in the Governador, New Mexico. Columbia Studies in Archaeology and Ethnology, Vol.2, Pt.1.

Lancaster, J.A. and D. Watson
1954 Archaeological Excavations in Mesa Verde National Park, Colorado, 1950. Archaeological Research Series No.2, National Park Service U.S. Department of the Interior. Washington.

Martin, P.S.
1937 Archaeological Work in the Ackmen-Lowry Area Southwestern Colorado. Anthropological Series Field Museum of Natural History, Vol. 23, No.3. Chicago.

Mera, H.P.
1935 Ceramic Clues to the Prehistory of North Central New Mexico. Laboratory of Anthropology, Technical Series Bulletin, No.8. Santa Fe.

Morris, E.H.
1939 Archaeological Studies in the La Plata District. Carnegie Institution of Washington Publication, No.519.

Morris, E.H. and R.F. Burgh
1954 Basket Maker II Sites near Durango, Colorado. Carnegie Institution of Washington Publication, No.604.

O'Bryan, D.
1950 Excavations in Mesa Verde National Park, 1947-1948. Medallion Papers, No.39. Gila Pueblo, Globe.

Peckham, S. (Ed.)
1957 Highway Salvage Archaeology, Vol.3. New Mexico State Highway Department and Museum of New Mexico. Santa Fe.

Roberts, F.H.H.Jr.
1935 A Survey of Southwestern Archaeology. American Anthropologist, Vol.37, No.1.

Vivian, R.G.
1959 The Hubbard Site and other Tri-Wall Structures in New Mexico and Colorado. Archaeological Research Series No.5, National Park Service, U.S. Department of Interior. Washington, D.C.

Wendorf, F., N. Fox, and O.L. Lewis (Ed.)
1956 Pipeline Archaeology. Laboratory of Anthropology and Museum of Northern Arizona. Santa Fe and Flagstaff.

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